





Your Waterblast Solutions Provider



Worldwide, thousands of contractors, plants, municipalities, and the military turn to Jetstream for our comprehensive offering of industrial, high-pressure waterblast equipment, parts and accessories. These demanding customers keep coming back to Jetstream year after year for the superior performance of our products and the unmatched technical support and customer service available to them day and night.

Count on Jetstream for the products and value-added services that make the difference!

- Waterblast equipment up to 40,000 psi (2750 bar)
- Thousands of high-quality parts and accessories in stock and available for same day shipping (see below, right)
- 24/7 Support Program (see right)
- Comprehensive web site with online parts ordering (www.waterblast.com)
- High-caliber domestic and international sales teams offer unmatched expertise in products and applications to provide the best solution for any job
- Start-up training on all new equipment — see Right Start Program page A-5
- Fully staffed engineering and R&D departments
- Innovative UNx® Fluid End — up to 40,000 psi (2750 bar) with upgrades available for most popular pumps, including NLB, Butterworth and Woma

Call us today or visit our web site at
www.waterblast.com

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(713) 302-7718 — 24/7 Hotline

Office Hours:
Monday-Friday
7:00 am to 6:00 pm (CST)



We're there anytime you need us!

Shutdowns are expensive endeavors, and plants choose contractors that they can rely on to work around-the-clock to minimize production downtime. When problems arise, or a part is needed, it can't always wait until the next day! That's why Jetstream is available day and night, seven days a week. The 24/7 Support Program provides Jetstream customers a competitive advantage with uninterrupted access to critical parts and accessories*, service and expertise to keep the job running.

713-302-7718
24/7 SUPPORT HOTLINE



Fast order processing!

Jetstream is driven to provide an edge to our customers. Among the most important value-added advantages Jetstream offers is access to a huge inventory of high quality parts and accessories and a customer-focused team to ensure that the products get where they need to be, when they need to be there. Over 90 percent of all orders** ship the very same day.

* Additional charges apply to after-hours order fulfillment

** Applies to orders received by 3:00 p.m. CST

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UNITS

UP TO 15,000 PSI (1000 BAR)



UNITS

DIESEL UNITS

Jetstream diesel units, designed for maximum reliability and simplicity, are available in a wide selection of standard models with nearly limitless options for customization to suit specific needs.



Standard Features

- High performance diesel engines from 110 to 500 horsepower (82 to 373 kW):
 - John Deere
 - Volvo
 - Cummins
 - Deutz
 - Caterpillar
- Jetstream UNx® pump
 - Superior performance, greater flexibility in the field, and reduced downtime and maintenance
 - Field convertible to handle any job
 - See UNx Features and Benefits on page B-1
- PTO and covered belt drive
- State-of-the-art controls
 - Easy-to-use control panel with high-visibility gauges
 - Hand-adjustable bypass valve (see page C-13)
- Dual rupture disc holders (see page G-1)
- Heavy-duty galvanized frame
- Atmospheric water tank
- Water filtration system with stainless steel filter(s)
- Comprehensive safety warning decal package
- Sealed weatherproof electrical wiring

Standard Models

- Four-wheel tandem trailer (above)
- Gooseneck trailer
- Standard skid
- Offshore skid (tested and certified to DNV standards)
- C-Series compact units (see the following page for more information)

Versatility

- Fast, in-the-field pressure range conversion with simple bolt-on Jetstream UNx Fluid Ends
- Convertibility of the UNx design allows one unit to do the work that another manufacturer would require multiple units or several hours of downtime to perform

Typical Applications

Jetstream diesel units are the ultimate solution for a variety of applications, including:

- Surface preparation
- Stripe removal
- Coating removal
- Tank cleaning
- Tube cleaning

Options

- Fuel-saving hydraulic throttle control (see page C-17) idles engine when system pressure is relieved
- Charge pump for pressurized feed
- Greaseless spread-bearing PTO
- Manual transmission drive
- Packing lube water recirculation package
- Safety package with fire extinguisher and grounding strap
- Severe service relief valve (see page G-2) to replace one rupture disc holder
- Shut-in regulator valve (see page C-14)
- Safety watch shutdown system
- Air-compressor package
- Direct water feed (no water tank)
- Hose reel
- Toolbox to store additional fluid ends, supplies, and tools
- Workbench and vise
- Racks for hoses, guns and lances
- Low water shutdown system
- Lifting bail
- Pump oil level and temperature shutdowns

Trailer Options

- Hydraulic or electric brakes
- LED lighting
- ICC trailer lighting
- Ball or ring coupler
- Aluminum wheels
- High-visibility striping around frame

UNITS

UP TO 15,000 PSI (1000 BAR)



DIESEL UNITS

Performance Specifications

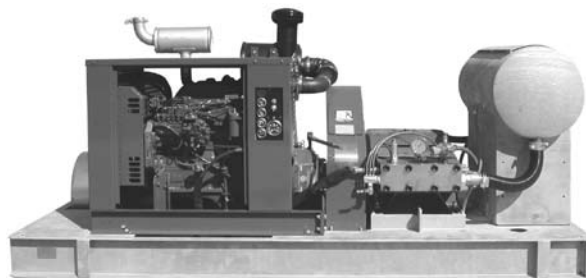
Actual output may vary by engine model and configuration

5015Q	500 hp 373 kW	Plunger Size			16	15		12
		Working Pressure	psi		8,000	10,000		15,000
			bar		550	700		1000
		Maximum Flow	gpm		98.0	79.1		50.6
			lpm		371	299		192

4215	325 hp 242 kW	Plunger Size		16	15	13	12
		Working Pressure	psi	8,000	10,000	12,500	15,000
			bar	550	700	850	1000
		Maximum Flow	gpm	62.9	50.4	40.2	32.5
			lpm	238	188	152	123
	250 hp 186 kW	Plunger Size		16	15	13	12
		Working Pressure	psi	6,000	8,000	10,000	12,500
			bar	415	550	700	850
		Maximum Flow	gpm	62.9	48.4	38.8	31.0
			lpm	238	184	145	101
	215 hp 160 kW	Plunger Size		15	13	12	11
		Working Pressure	psi	6,500	8,000	10,000	12,000
			bar	450	550	700	825
		Maximum Flow	gpm	50.7	40.2	32.5	27.3
			lpm	192	152	123	103

3615	170 hp 127 kW	Plunger Size		15	13	12	11	10
		Working Pressure	psi	6,000	7,500	10,000	12,000	15,000
			bar	415	525	700	825	1000
		Maximum Flow	gpm	43.6	34.6	26.4	22.0	17.6
			lpm	165	131	98	83	69
	150 hp 112 kW	Plunger Size		15	13	11	10	9
		Working Pressure	psi	5,000	7,000	10,000	12,000	15,000
			bar	350	475	700	825	1000
		Maximum Flow	gpm	43.6	32.6	23.3	19.4	15.7
			lpm	165	123	88	73	59

3015	125 hp 93 kW	Plunger Size			11	10	9	8
		Working Pressure	psi		8,000	10,000	12,500	15,000
			bar		550	700	850	1000
		Maximum Flow	gpm		23.2	18.4	14.9	11.8
			lpm		89	70	56	45



Standard Skid

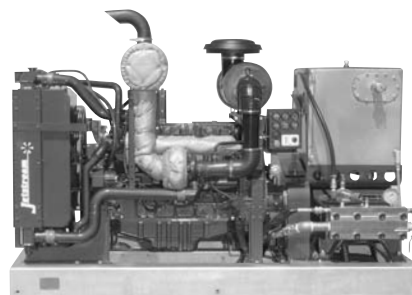


Offshore Certified Skid



Gooseneck Trailer

C-Series Compact Units



- Four models available ranging from 125 to 340 horsepower (92 to 254 kW)
- Deutz and Volvo open power units
- Small footprint maximizes use of space
- Greaseless direct drive PTO
- Synchronous belt drive
- Fuel-saving hydraulic throttle control (see pages C-17 & C-18) idles engine when system pressure is relieved
- Packing lube water recirculation
- Stainless steel charge pump for pressurized feed
- Available to European customers with optional trailer mount and soundproofing enclosures
- Available outside of Europe as a stationary skid



* Displacement (flow) values represented assume 90% mechanical efficiency and neglect inefficiency resulting from compressibility of water and expansion of pressure-bearing components.

UNITS

UP TO 15,000 PSI (1000 BAR)



ELECTRIC UNITS

Jetstream electric units, designed for maximum reliability and simplicity, are available in a wide selection of standard models.

Standard Features

- Top-of-the-line electric motors from 60 to 250 horsepower (45 to 186 kW) with 1.15 service factor
- Three available enclosure types:
 - Open drip
 - TEFC (totally enclosed fan cooled)
 - Explosion proof
- Jetstream UNx® pump:
 - Superior performance, greater flexibility in the field, and reduced downtime and maintenance
 - See UNx Features and Benefits on page B-1
- Soft-start or across-the-line starter
- Covered belt drive
- State-of-the-art controls
 - Hand-adjustable bypass valve
 - Start, stop, jog button control
 - Shutdown system to protect equipment
- Dual rupture disc holders (see page G-1)
- Water filtration system with stainless steel filter(s)
- Atmospheric water tank
- Low water shutdown system
- Heavy-duty galvanized frame
- Comprehensive safety warning decal package

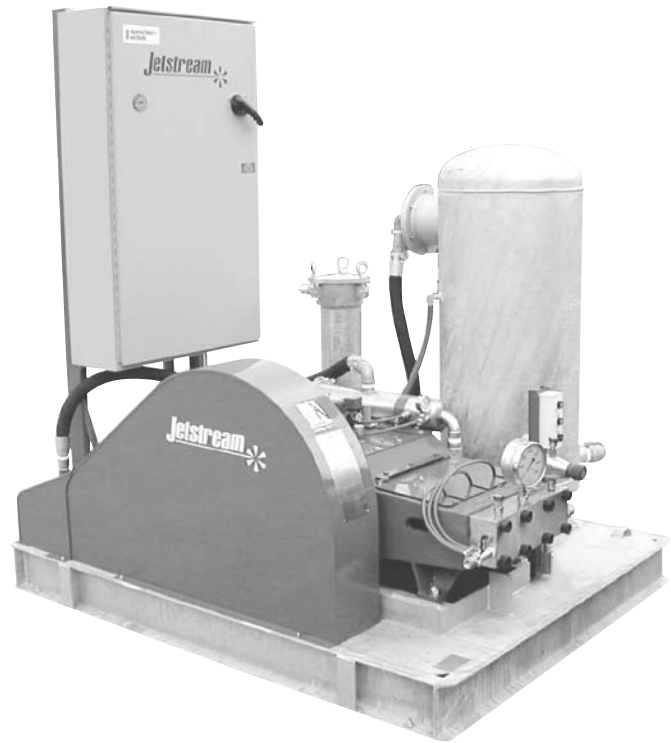
Standard Models

- Standard skid
- Steerable trailer

Typical Applications

Jetstream electric units are the ultimate solution for a variety of applications, including:

- Surface preparation
- Paint booth cleaning
- Tube cleaning
- Tank cleaning
- Waterjet cutting



Options

- Charge pump for pressurized feed
- Packing lube water recirculation package
- Variable speed drive
- Severe service relief valve (see page G-2) to replace one rupture disc holder
- Motor hour meter
- Shut-in regulator valve (see page C-14)
- Pressurized water tank
- Direct water feed (no water tank)
- Hose reel
- Lifting bail

Steerable Trailer Options

- Toolbox to store additional fluid ends, supplies and tools
- High-visibility striping around frame

UNITS

UP TO 15,000 PSI (1000 BAR)

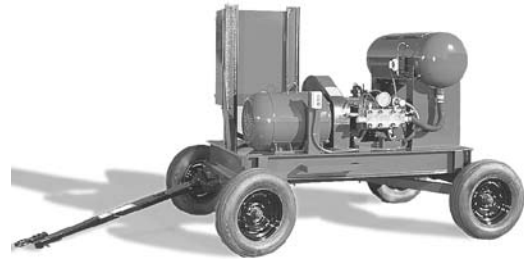


UNITS

ELECTRIC UNITS

Performance Specifications

4215	250 hp 186 kW	Plunger Size			16	15	13	12
		Working Pressure	psi		8,000	10,000	12,500	15,000
			bar		550	700	850	1000
		Maximum Flow	gpm		52.1	42.0	33.3	26.9
			lpm		197	159	126	102
	200 hp 149 kW	Plunger Size			16	15	13	12
		Working Pressure	psi	6,000	8,000	10,000	12,500	15,000
			bar	425	550	700	850	1000
		Maximum Flow	gpm	53.6	43.2	34.2	27.6	23.2
			lpm	203	164	129	104	88



Steerable Trailer

3615	150 hp 112 kW	Plunger Size			15	13	12	11	10
		Working Pressure	psi	6,000	8,000	10,000	12,000	15,000	
			bar	425	550	700	825	1000	
		Maximum Flow	gpm	38.7	30.6	24.8	20.8	16.5	
			lpm	147	116	94	79	63	
	125 hp 93 kW	Plunger Size			15	13	12	11	10
		Working Pressure	psi	6,000	7,500	10,000	12,000	15,000	
			bar	425	525	700	825	1000	
		Maximum Flow	gpm	34.1	27.0	21.8	18.3	14.5	
			lpm	129	102	83	69	55	

3015	125 hp 93 kW	Plunger Size					11	10	9
		Working Pressure	psi				10,000	12,000	15,000
			bar				700	825	1000
		Maximum Flow	gpm				21.3	16.8	13.6
			lpm				81	64	51
	100 hp 75 kW	Plunger Size				11	10	9	8
		Working Pressure	psi		8,000	10,000	12,500	15,000	
			bar		550	700	850	1000	
		Maximum Flow	gpm		21.3	16.8	13.6	10.8	
			lpm		81	64	51	41	
	75 hp 56 kW	Plunger Size				11	10	9	8
		Working Pressure	psi		8,000	10,000	12,500	15,000	
			bar		550	700	850	1000	
		Maximum Flow	gpm		16.7	13.3	10.7	8.5	
			lpm		63	50	40	32	
	60 hp 45 kW	Plunger Size			11	10	9	8	7
		Working Pressure	psi	6,000	7,500	10,000	12,500	15,000	
			bar	425	525	700	850	1000	
		Maximum Flow	gpm	16.8	13.3	10.7	8.5	7.1	
			lpm	64	50	40	32	27	

* Displacement (flow) values represented account for 1.15 service factor and assume 90% mechanical efficiency and neglect inefficiency resulting from compressibility of water and expansion of pressure-bearing components.

UNITS

UP TO 15,000 PSI (1000 BAR)



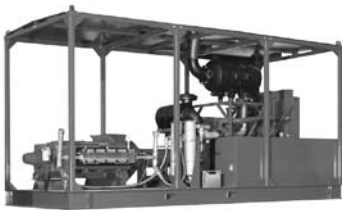
UNITS

CUSTOM UNITS

In addition to a wide selection of standard units and options, close collaboration between Jetstream solutions providers and engineers provides almost unlimited options for customization to meet specific needs. Common requests include:

- Custom trailers and skids
- Special control devices (pneumatic, electronic, hydraulic)
- Customizations to meet special plant requirements

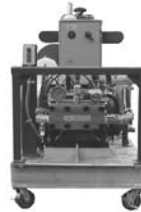
Jetstream can build the perfect unit for any job.



500 hp Offshore Certified Skid



Special Water Tank



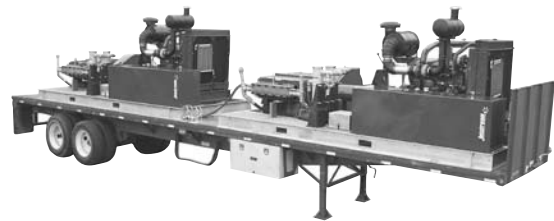
Push Cart



Truck-Mounted Dual Pump Unit



Enclosed Trailer Unit



Tandem 5015Q Trailer — 1,000 horsepower (750 kW)

“RIGHT START” PROGRAM

In order to ensure customer satisfaction, Jetstream has developed the Right Start program, a four-step plan designed to provide the owners and operators of new Jetstream waterblast units with the knowledge and support needed to feel familiar, confident and satisfied with Jetstream equipment and personnel.

1. Transportation



Once a new waterblaster is built and thoroughly tested, the *Traffic Manager* contacts the new owner to arrange for the unit's arrival to the right place at the right time.

2. Training



All new waterblasters include personal training by the *Right Start Technician*. Training involves both classroom and “hands-on” instruction to make sure that each operator is thoroughly familiar with the design and function of the unit and accessories, enabling him to safely put the new equipment to optimal use.

3. Follow-up



Within thirty days of delivery, and again within sixty days, the *Solutions Provider* will call to answer any questions and ensure complete satisfaction.

4. Trust



If any questions or problems ever arise, the Jetstream team is available and committed to providing prompt answers and solutions.



PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)



THE UNx® ADVANTAGE

FEATURES AND BENEFITS

Through nearly twenty years of service, the Jetstream UNx Fluid End has remained the most efficient, easy-to-use, and versatile waterblast tool available. Standard on every Jetstream 15,000 psi unit or bareshaft pump, the UNx Fluid End is also available as a bolt-on replacement for most popular manufacturer's pump models to replace a worn or inefficient pump, or as a powerful addition to an existing Jetstream pump to increase the range of available working pressures. Models are available for use at up to 500 horsepower.

UNx Fluid End Features

Serviceability

- Five-minute packing change
- Fifteen-minute pop-out valve cartridge change
- No special tools or equipment required
- Plungers clamped, NOT threaded, for easy maintenance

Simplicity

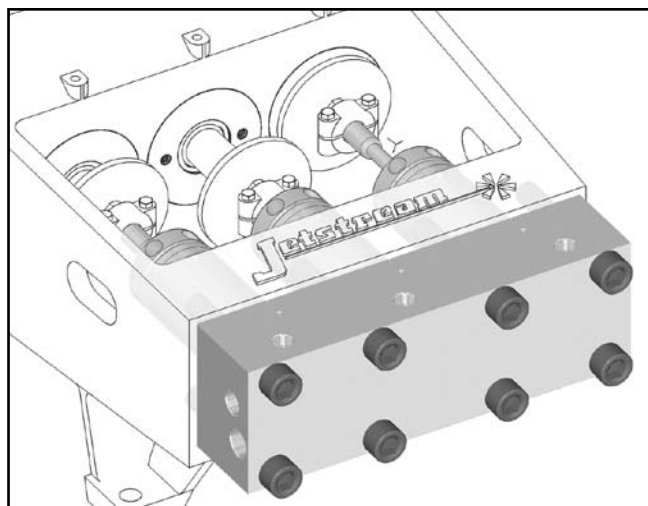
- Fewer parts than other manufacturer's
- Uni-Valve™ one-piece cartridges include suction & discharge valves, seats, springs and seals
- Swing-down manifold for easy access to components

Versatility

- Fast in-the-field pressure range conversion with simple bolt-on Jetstream UNx Fluid Ends
- Convertibility of the UNx design allows one unit to do the work that another manufacturer would require multiple units or several hours of downtime to perform

Other Features

- Water lubricated packing set
- Colmonoy coated plungers
- High volumetric efficiency
- All pressure-bearing components precision machined from high quality stainless steel

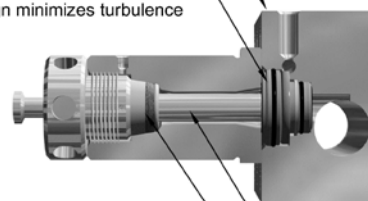


Uni-Valve™ Cartridge

- Combined suction and discharge valves in one self-contained part
- Slip fit for easy maintenance
- In-line design minimizes turbulence

Swing-Down Manifold

- Easy access to valves
- Weep holes indicate source of seal leaks



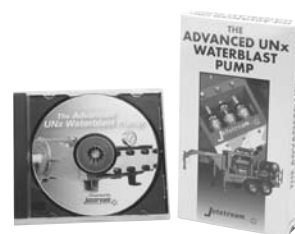
Uni-Pak™ Plunger Packing Set

- One piece packing/one piece brass
- Tapered for easy removal
- Water lubricated - no oil

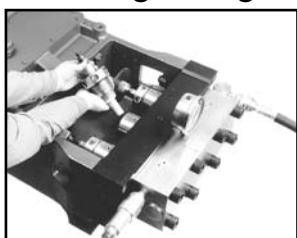
Colmonoy Coated Plungers

For more information on the UNx Fluid End design, order [The Advanced UNx Waterblast Pump](#) video, available in VHS, DVD & CD-ROM formats.

Part No.	Format
27437	VHS – NTSC North America
27437P	VHS – PAL
28634	DVD
28635	CD-ROM



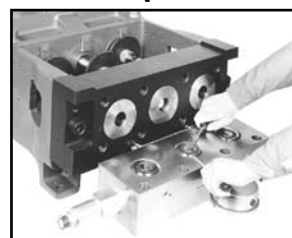
Five-Minute Packing Change



Slide Out Stuffing Boxes



15-Minute Valve Replacement



PUMPS & FLUID ENDS

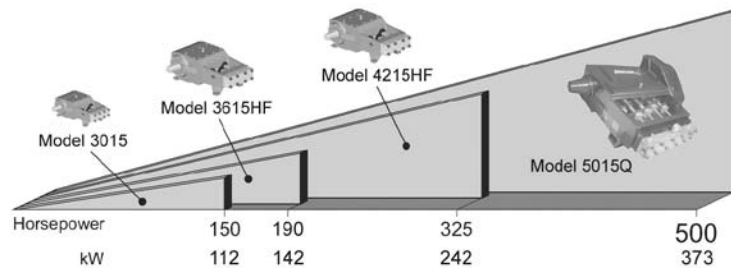
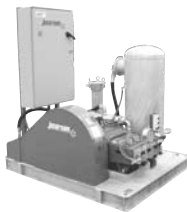
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID ENDS AVAILABLE MODELS

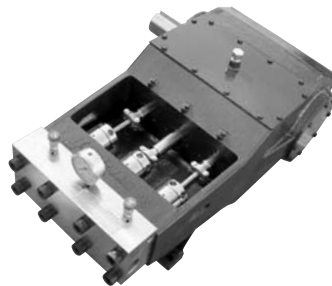
JETSTREAM UNITS

- Choose from diesel or electric
- Select skid mount, 4-wheel steerable trailer, gooseneck trailer, or tandem trailer
- **See Section A for available models**



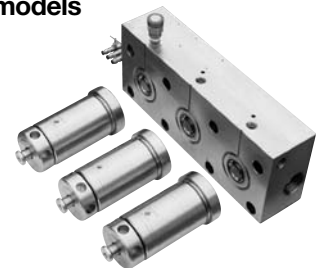
JETSTREAM BARESHAFT PUMPS

- Replace old, worn-out pumps
- Custom built systems
- Utilize existing engine and skid
- Available in sizes up to 500 HP
- Simple, safe, and easy to maintain
- **See Pages B-3 – B-13 for available models**



JETSTREAM FLUID ENDS

- Supplement an existing Jetstream UNx pump to increase range of available pressures.
- Pressure range conversions have been performed by two-man teams at trade show demonstrations in fifteen minutes using hand tools and under six minutes with air tools!
- **See Pages B-14 – B-21 for available models**



UNx FLUID END UPGRADES



Butterworth L450/200
Gardner-Denver TF450
See Pages B-29 – B-31



Butterworth L375
Gardner-Denver TF375
See Pages B-34 – B-35



NLB Quintuplex Pumps
Up to 250 horsepower
See Pages B-25 – B-26



NLB Triplex Pumps
150 to 300 horsepower
See Pages B-22 – B-24



Woma 150 Series
See Pages B-38 – B-42

- Increase productivity and reduce operating costs by replacing an inefficient or worn fluid end on another manufacturer's pump with a Jetstream UNx Fluid End.
- Conversions available for most popular models.
- Bolt-on installation can be performed in minutes.
- Fewer parts, fewer problems.
- **See pages B-22 – B-52 for some models available.**
- Consult factory for models not detailed in this catalog.
- Other models available upon request. Contact Jetstream for details.

Also available for the following pump models:

- Butterworth L74/T300
- NLB 1012/TD-60
- Tritan P-313
- Tritan 5127
- Wheatley HP125
- Weatherford/American Aero FE-85/WBD-90
- Weatherford/American Aero FE-145/WBD-150

PUMPS & FLUID ENDS

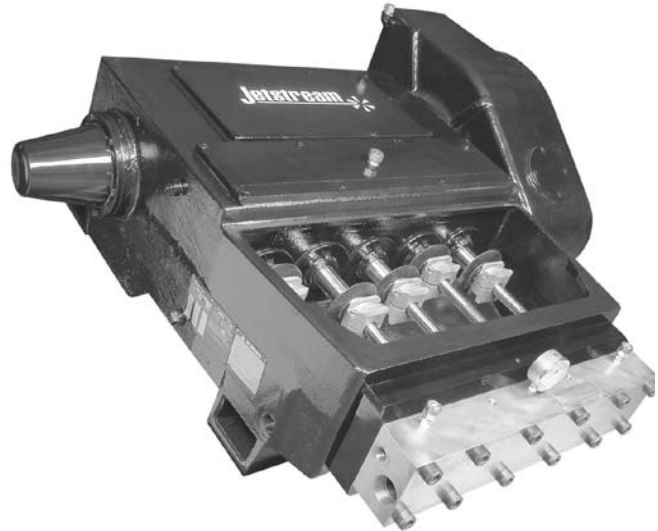
UP TO 15,000 PSI (1000 BAR)



UNx® BARESHAFT PUMP MODEL 5015Q

The Jetstream model 5015Q waterblast pump is capable of power input of up to 500 horsepower (373 kW). It is the most advanced and efficient high horsepower waterblast pump in the industry. Combining the strength and durability of a proven power end workhorse with the unparalleled simplicity, serviceability and versatility of the UNx fluid end design, Jetstream bareshaft pumps are the best choice for those building their own system or replacing a complicated, worn or unreliable pump.

- 500 horsepower (373 kW)
- Flow: 50.6 gpm (192 lpm) at 15,000 psi (1000 bar)
77.5 gpm (293 lpm) at 10,000 psi (700 bar)
96.9 gpm (367 lpm) at 8,000 psi (550 bar)
- Five Plunger (quintuplex) design
- Includes suction plumbing and two rupture disc holders with discs



UNx Fluid End Features

- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**

UNx Power End Features

- Pressurized power end lubrication with oil filter, cooler and low oil level shutdown
- Forged steel shotpeened crankshaft
- Center roller bearings support crankshaft
- Gear pack permits direct coupling to engine

General Specs

Plungers			Connection Types*		Pump Speed Range
#	Stroke		Discharge Ports	Top Ports (Accessory)	
	in	mm			
5	5.00	127	Jetstream HHP	1/2" NPT Fml	100 – 413

* See details on all connection types beginning on page I-2.

Power End Specs

Max. Power Input		Maximum Frame Load		Total Weight		Gear Pack Ratio	Pump Oil Capacity	
hp	kW	lb	N	lb	kg		gal	l
500	373	26,500	117900	7,350	3330	4.84:1	12	45

Fluid End Specs

Pump Part No.	Plunger Size			Flow at Specified Pump Speeds**								Max. Flow / Operating Pressure			
	No.	Diameter		100 RPM		200 RPM		300 RPM		400 RPM		Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	psi	bar
55100	#12	1.200	30.48	12.2	46	24.5	93	36.7	139	49.0	185	50.6	192	15,000	1000
55105	#15	1.500	38.10	19.1	72	38.3	145	57.4	217	76.5	290	77.5	293	10,000	700
55110	#16	1.670	42.42	23.7	90	47.4	180	71.1	269	94.9	359	96.9	367	8,000	550

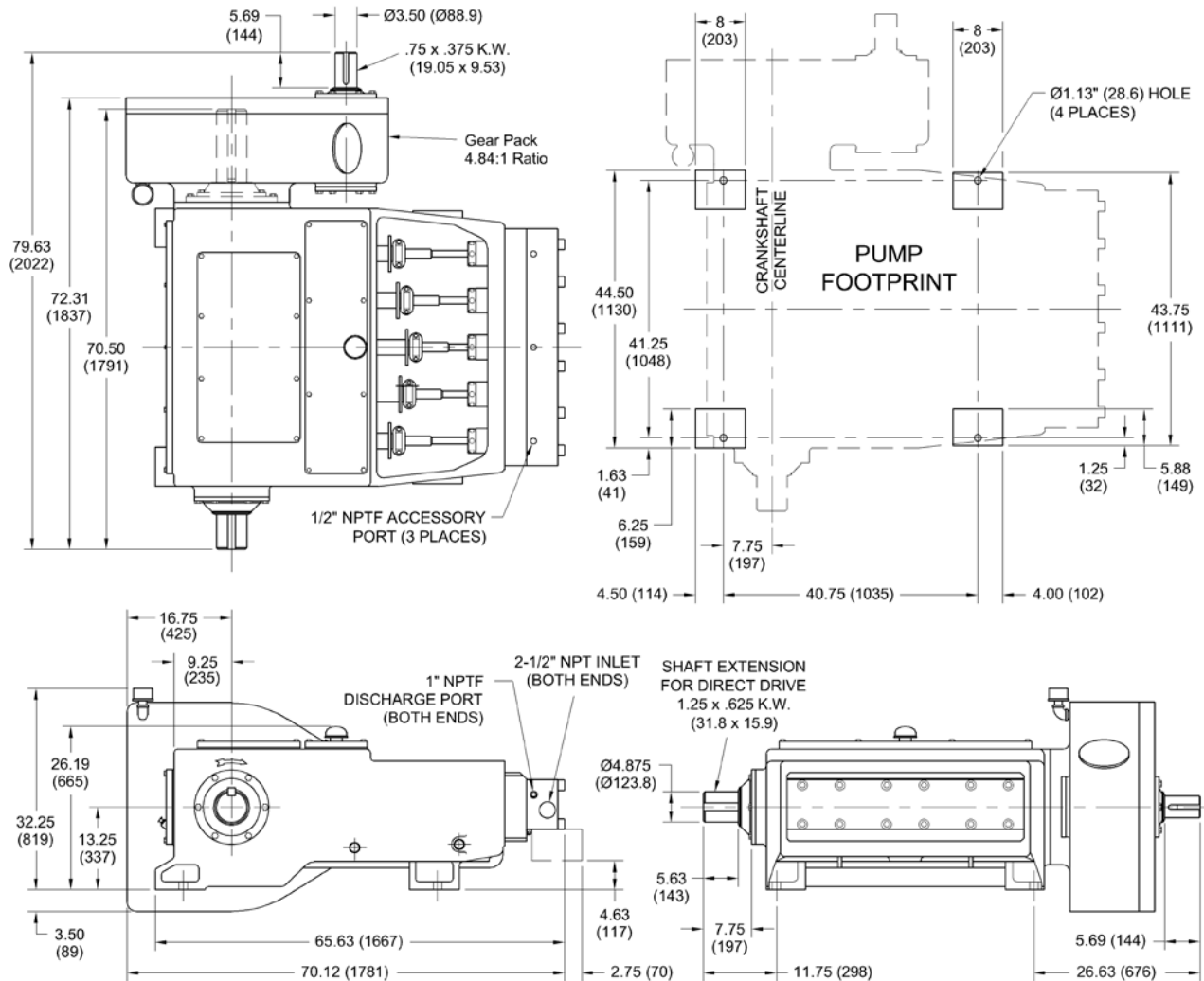
** Flow values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components.

PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)



UNx® BARESHAFT PUMP MODEL 5015Q



Related Items

- 5015Q UNx FLUID ENDS** — See page B-14 – B-15
- SEVERE SERVICE RELIEF VALVES** — See page G-2
- BYPASS VALVES** — See page C-13
- REGULATOR VALVES** — See page C-14
- FILTERS** — See page C-19
- PRESSURE GAUGES** — See page F-1

PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)



UNx® BARESHAFT PUMP MODEL 4215HF

The Jetstream model 4215HF waterblast pump is capable of power input of up to 325 horsepower (242 kW). It is the most advanced and efficient waterblast pump of its size in the industry. Combining the strength and durability of a proven power end workhorse with the unparalleled simplicity, serviceability and versatility of the UNx fluid end design, Jetstream bareshaft pumps are the best choice for those building their own system or replacing a complicated, worn or unreliable pump.

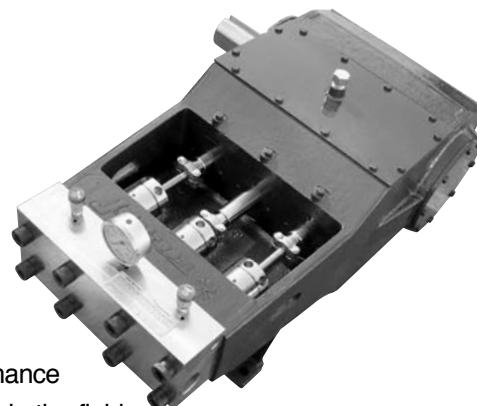
- Up to 325 horsepower (242 kW)
- Flow: 32.5 gpm (123 lpm) at 15,000 psi (1000 bar)
40.2 gpm (152 lpm) at 12,500 psi (850 bar)
50.4 gpm (191 lpm) at 10,000 psi (700 bar)
62.9 gpm (238 lpm) at 8,000 psi (550 bar)
- Three Plunger (triplex) design

UNx Fluid End Features

- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**

UNx Power End Features

- Ductile iron power frame is the strongest in the industry
- 4200HD crankshaft machined from high-tech alloy for superior performance at higher power input
- Largest bearings of any comparable pump on the market



General Specs

Plungers			Connection Types*		Pump Speed Range
#	Stroke		Discharge Ports	Top Ports (Accessory)	
	in	mm			
3	4.25	108	3/4" NPT Fm	1/2" NPT Fm	150 – 520

* See details on all connection types beginning on page I-2.

Power End Specs

Power End	Max. Power Input		Maximum Frame Load		Total Weight		Pump Oil		
	hp	kW	lb	N	lb	kg	Type	Capacity	
								gal	l
4200	260	194	15,000	66700	1,800	820	80W-90	9	34
4200HD	325	242	17,750	78950					

Fluid End Specs

Pump Part No.	Power End Model	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
		No.	Diameter		150 RPM		200 RPM		300 RPM		400 RPM		500 RPM				Flow**		Pressure	
			in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	hp	kW	gpm	lpm	psi	bar
52130	4200	#10	.980	24.89	6.2	24	8.3	32	12.5	47	16.7	63	20.8	79	210	157	21.7	82	15,000	1000
52135	4200	#11	1.100	27.94	7.9	30	10.5	40	15.7	60	21.0	79	26.2	99	260	194	26.9	102	15,000	1000
55095	4200HD	#12	1.200	30.48	9.4	35	12.5	47	18.7	71	25.0	95	31.2	118	325	242	32.5	123	15,000	1000
52140	4200	#12	1.200	30.48	9.4	35	12.5	47	18.7	71	25.0	95	31.2	118	260	194	32.2	122	12,500	850
55090	4200HD	#13	1.335	33.91	11.6	44	15.5	59	23.2	88	30.9	117	38.6	146	325	242	40.2	152	12,500	850
52145	4200	#13	1.335	33.91	11.6	44	15.5	59	23.2	88	30.9	117	38.6	146	260	194	40.2	152	10,000	700
55085	4200HD	#15	1.500	38.10	14.6	55	19.5	74	29.3	111	39.0	148	48.8	185	325	242	50.4	191	10,000	700
52150	4200	#15	1.500	38.10	14.6	55	19.5	74	29.3	111	39.0	148	48.8	185	260	194	50.4	191	8,000	550
55080	4200HD	#16	1.670	42.42	18.1	69	24.2	92	36.3	137	48.4	183	60.5	229	325	242	62.9	238	8,000	550
53335	4200	#16	1.670	42.42	18.1	69	24.2	92	36.3	137	48.4	183	60.5	229	260	194	62.0	235	6,500	450

** Flow values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components.

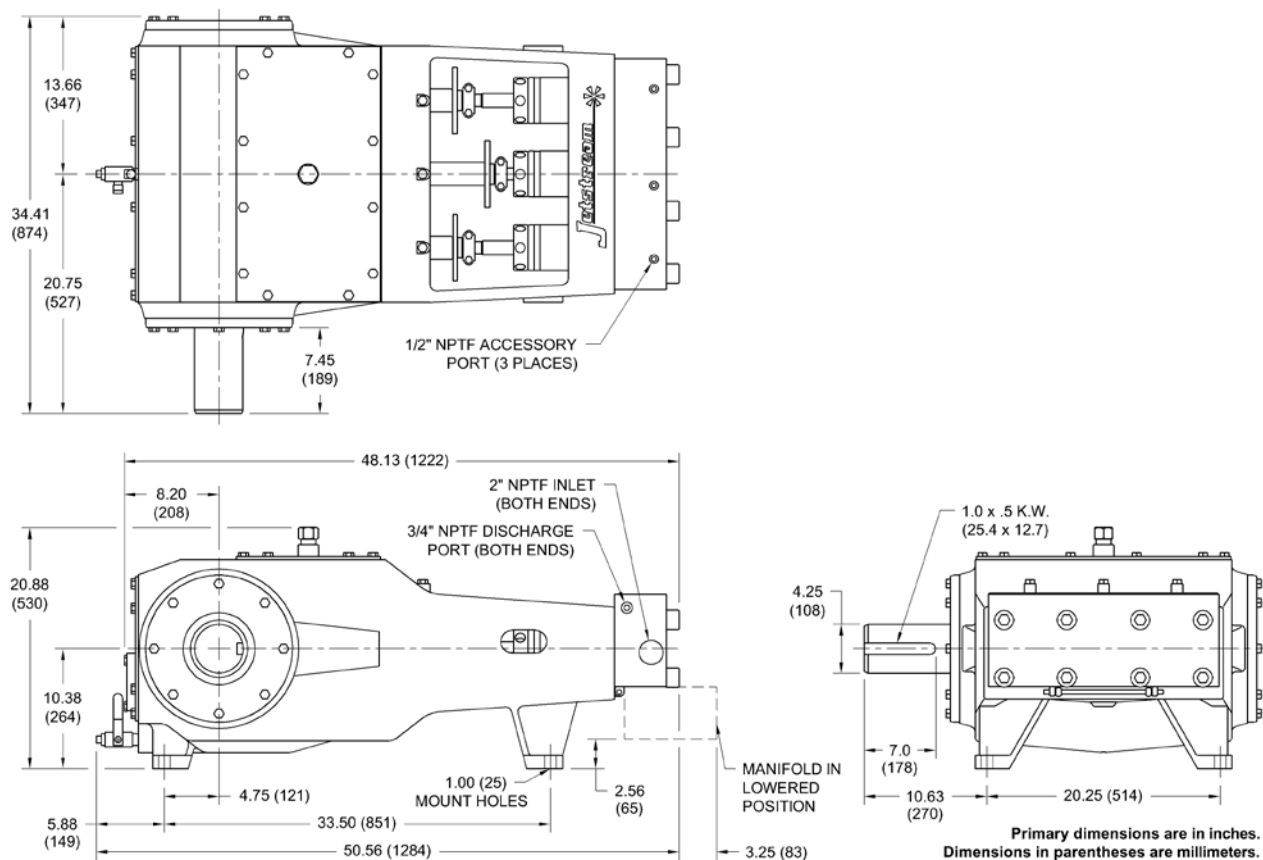
PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)



UNx® BARESHAFT PUMP MODEL 4215HF

PUMPS &
FLUID ENDS



Related Items

4215HF UNx FLUID ENDS — See page B-16 – B-19
SEVERE SERVICE RELIEF VALVES — See page G-2
BYPASS VALVES — See page C-13
REGULATOR VALVES — See page C-14
FILTERS — See page C-19
PRESSURE GAUGES — See page F-1

PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)

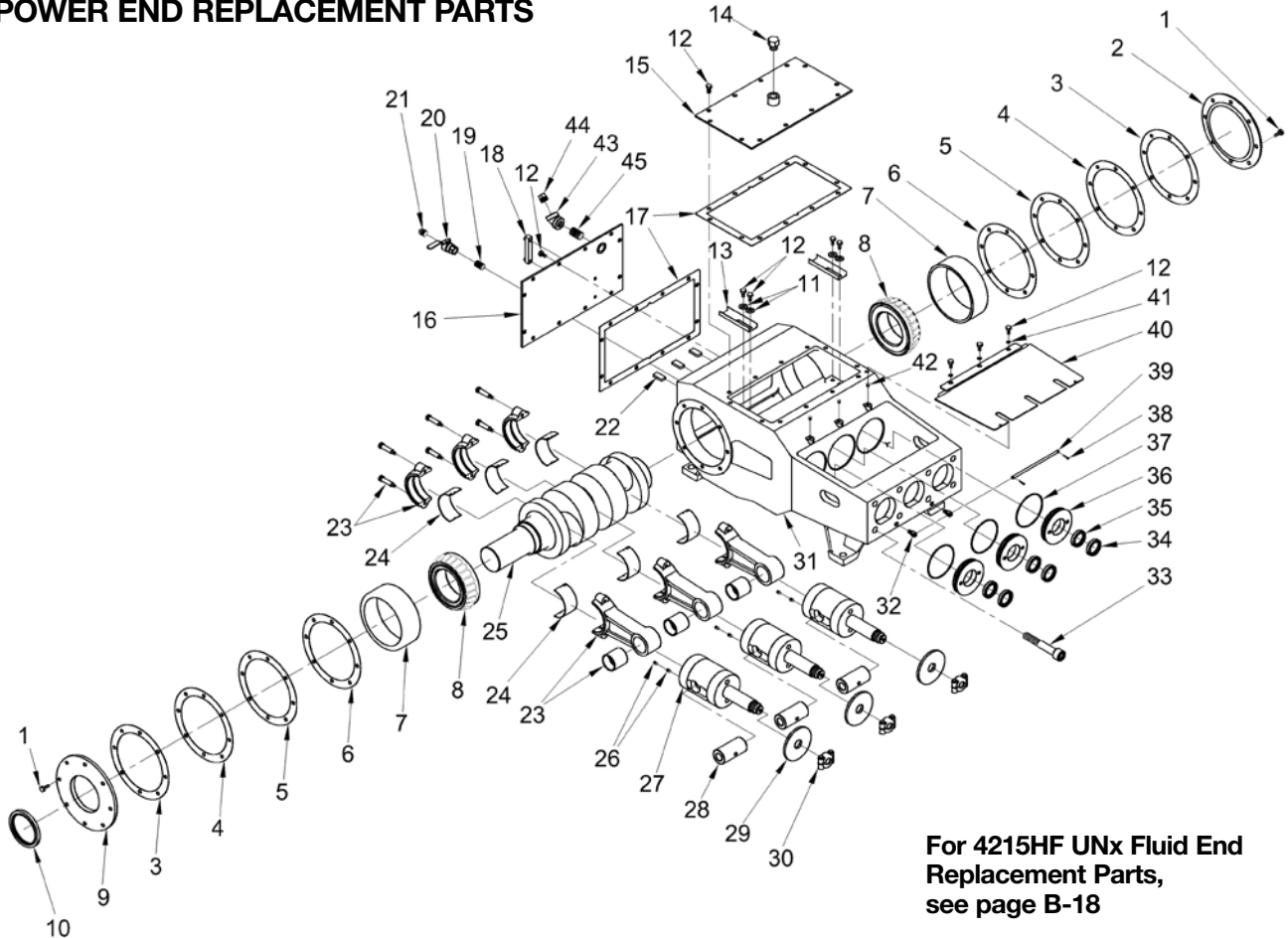


UNx® BARESHAFT PUMP

MODEL 4215HF

POWER END REPLACEMENT PARTS

PUMPS &
FLUID ENDS



For 4215HF UNx Fluid End Replacement Parts, see page B-18

Item	Part No.	Description
1	26491	Capscrew
2	51536	Frame Cap, Outboard
3	26259	Shim, 0.02" Thick
4	26259-1	Shim, 0.01" Thick
5	26259-2	Shim, 0.0075" Thick
6	26259-3	Shim, 0.005" Thick
7	26376	Bearing Race
8	26390	Bearing
9	51538	Frame Cap, Inboard
10	26208	Crankshaft Seal
11	26798	Washer
12	26361	Capscrew
13	26484	Oil Trough
14	26360	Breather Cap
15	51279	Plate, Top Cover
16	55253	Plate, Back Cover

Item	Part No.	Description
17	26195	Gasket, Cover Plate
18	28062	Gauge, Oil Level, 4"
	71318	Gauge, Oil Level, 3.5"
19	25946	Nipple
20	27101	Ball Valve
21	25928	Plug
22	26705	Magnet
23	51487	Connecting Rod
24	26051	Bearing, Journal
25	26389	Crankshaft
	28826	Crankshaft, High Strength
26	26369	Setscrew
27	51731	Crosshead
28	51534	Pin, Crosshead
29	26487	Deflector
30	51736	Plunger Coupling

Item	Part No.	Description
31	51421	Power Frame
32	51659	Trunnion
33	26500	Capscrew
34	04101	Outboard Oil Seal
35	26481	Inboard Oil Seal
36	51713	Seal Plate
37	26479	O-Ring
38	26468	Cotter Pin
39	50295	Trunnion Rod
40	53632	Cover, Rod Box
41	26053	O-Ring
42	26482	Setscrew
43	29739	Elbow
44	29738	Plug
45	27728	Nipple

PUMPS & FLUID ENDS

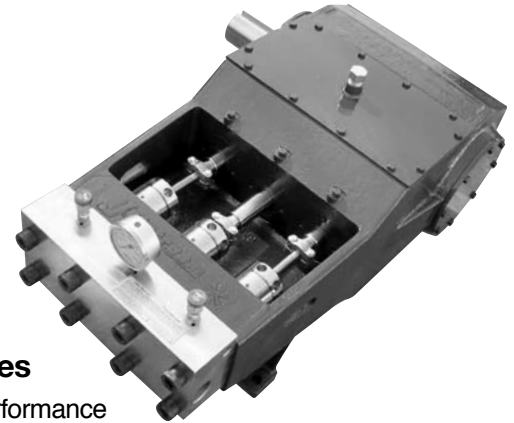
UP TO 15,000 PSI (1000 BAR)



UNx® BARESHAFT PUMP MODEL 3615HF

The Jetstream model 3615HF waterblast pump is capable of power input of up to 190 horsepower (142 kW). It is the most advanced and efficient medium horsepower waterblast pump in the industry. Combining the strength and durability of a proven power end workhorse with the unparalleled simplicity, serviceability and versatility of the UNx fluid end design, Jetstream bareshaft pumps are the best choice for those building their own system or replacing a complicated, worn or unreliable pump.

- Up to 190 horsepower (142 kW)
- Flow: 19.4 gpm (73 lpm) at 15,000 psi (1000 bar)
29.1 gpm (110 lpm) at 10,000 psi (700 bar)
45.4 gpm (172 lpm) at 6,000 psi (400 bar)
- Three Plunger (triplex) design



PUMPS &
FLUID ENDS

UNx Fluid End Features

- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- See UNx Features and Benefits on page B-1

UNx Power End Features

- Ductile iron power frame is the strongest in the industry
- Largest bearings of any comparable pump on the market

General Specs

Plungers			Connection Types*		Pump Speed Range	
#	Stroke		Discharge Ports	Top Ports (Accessory)		RPM
	in	mm				
3	3.60	92	3/4" NPT Fml	1/2" NPT Fml	150 – 550	

* See details on all connection types beginning on page I-2.

Power End Specs

Max. Power Input		Maximum Frame Load		Total Weight		Pump Oil		
						Type	Capacity	
hp	kW	lb	N	lb	kg		gal	l
190	142	11,300	50300	1,720	780	80W-90	9	34

Fluid End Specs

Pump Part No.	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
	No.	Diameter		150 RPM		200 RPM		300 RPM		400 RPM		500 RPM				Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	hp	kW	gpm	lpm	psi	bar
52575	#9	.900	22.86	4.5	17	6.0	23	8.9	34	11.9	45	14.9	56	150	112	15.5	59	15,000	1000
52570	#10	.980	24.89	5.3	20	7.1	27	10.6	40	14.1	53	17.6	67	190	142	19.4	73	15,000	1000
														150	112	19.4	73	12,000	825
52565	#11	1.100	27.94	6.7	25	8.9	34	13.3	50	17.8	67	22.2	84	190	142	24.4	93	12,000	825
														150	112	23.3	88	10,000	700
52560	#12	1.200	30.48	7.9	30	10.6	40	15.9	60	21.2	80	26.4	100	190	142	29.1	110	10,000	700
														150	112	29.1	110	8,000	550
52555	#13	1.335	33.91	9.8	37	13.1	50	19.6	74	26.2	99	32.7	124	190	142	36.0	136	8,000	550
														150	112	35.8	136	6,500	450
52550	#15	1.500	38.10	12.4	47	16.5	63	24.8	94	33.1	125	41.3	156	190	142	45.5	172	6,000	400
														150	112	45.5	172	5,000	350

** Flow values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components.

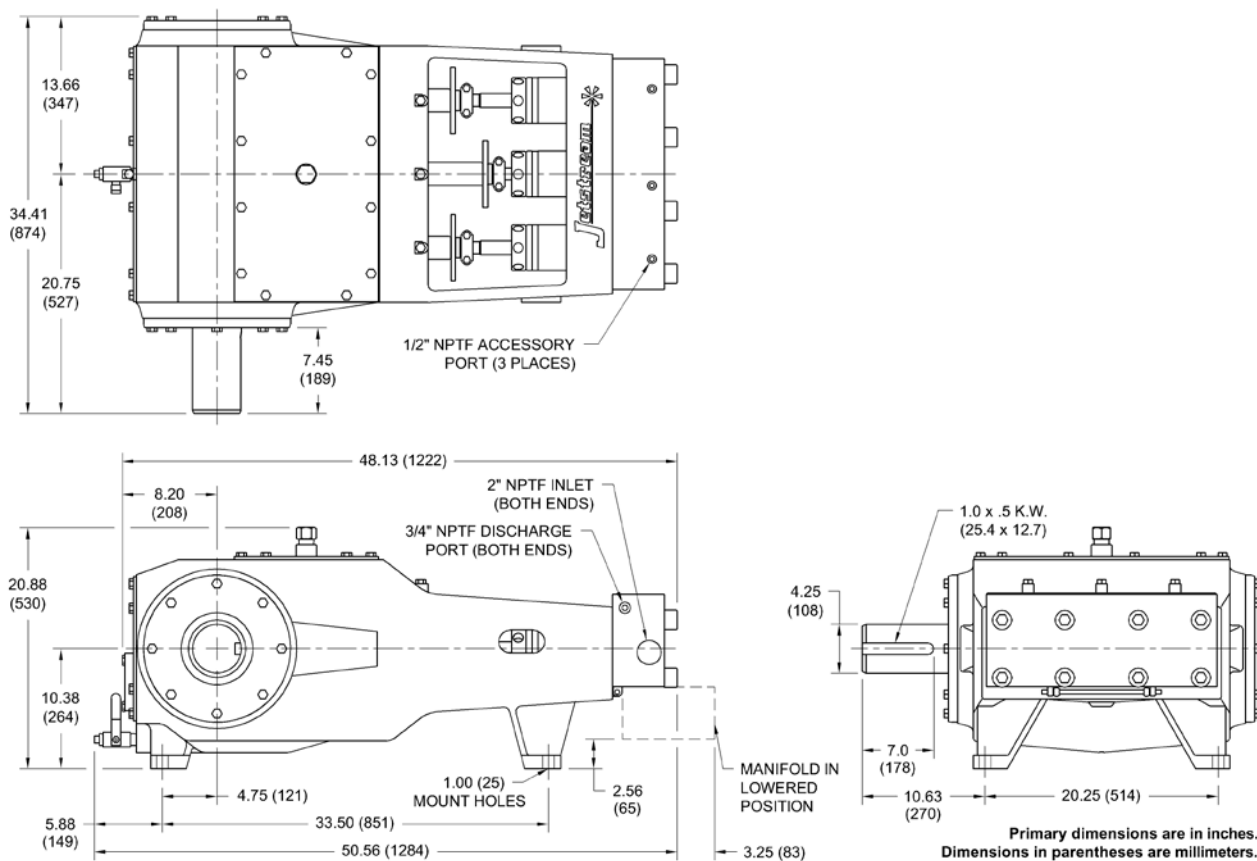
PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)



UNx[®] BARESHAFT PUMP MODEL 3615HF

PUMPS &
FLUID ENDS



Related Items

3615HF UNx FLUID ENDS — See page B-16 – B-19
SEVERE SERVICE RELIEF VALVES — See page G-2
BYPASS VALVES — See page C-13
REGULATOR VALVES — See page C-14
FILTERS — See page C-19
PRESSURE GAUGES — See page F-1

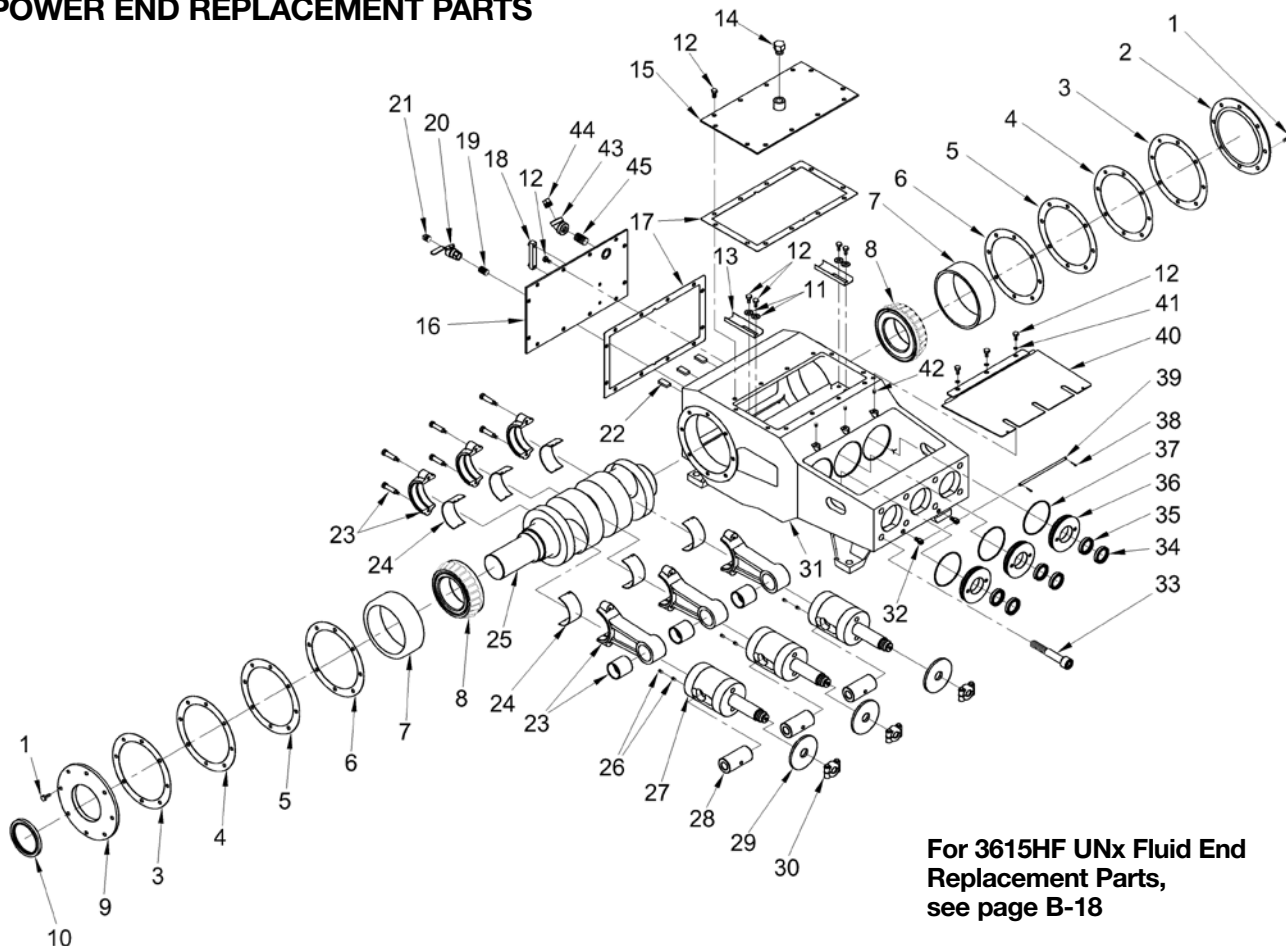
PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)



UNx® BARESHAFT PUMP MODEL 3615HF POWER END REPLACEMENT PARTS

PUMPS &
FLUID ENDS



**For 3615HF UNx Fluid End
Replacement Parts,
see page B-18**

Item	Part No.	Description
1	26491	Capscrew
2	51536	Frame Cap, Outboard
3	26259	Shim, 0.02" Thick
4	26259-1	Shim, 0.01" Thick
5	26259-2	Shim, 0.0075" Thick
6	26259-3	Shim, 0.005" Thick
7	26376	Bearing Race
8	26390	Bearing
9	51538	Frame Cap, Inboard
10	26208	Crankshaft Seal
11	26798	Washer
12	26361	Capscrew
13	26484	Oil Trough
14	26360	Breather Cap
15	51279	Plate, Top Cover
16	55253	Plate, Back Cover

Item	Part No.	Description
17	26195	Gasket, Cover Plate
18	28062	Gauge, Oil Level, 4"
	71318	Gauge, Oil Level, 3.5"
19	25946	Nipple
20	27101	Ball Valve
21	25928	Plug
22	26705	Magnet
23	51487	Connecting Rod
24	26051	Bearing, Journal
25	53600	Crankshaft
26	26369	Setscrew
27	51731	Crosshead
28	51534	Pin, Crosshead
29	26487	Deflector
30	51736	Plunger Coupling

Item	Part No.	Description
31	51421	Power Frame
32	51659	Trunnion
33	26500	Capscrew
34	04101	Outboard Oil Seal
35	26481	Inboard Oil Seal
36	51713	Seal Plate
37	26479	O-Ring
38	26468	Cotter Pin
39	50295	Trunnion Rod
40	53632	Cover, Rod Box
41	26053	O-Ring
42	26482	Setscrew
43	29739	Elbow
44	29738	Plug
45	27728	Nipple

PUMPS & FLUID ENDS

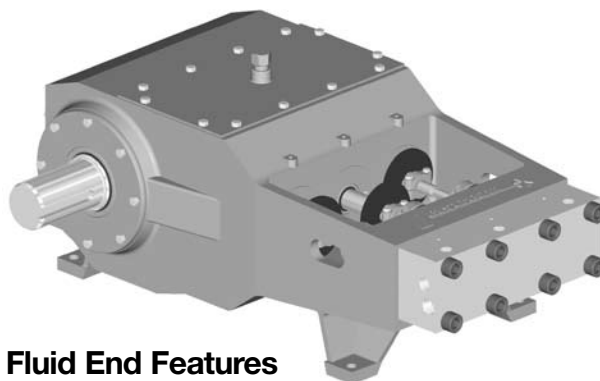
UP TO 15,000 PSI (1000 BAR)



UNx® BARESHAFT PUMP MODEL 3015

The Jetstream model 3015 waterblast pump is capable of power input of up to 150 horsepower (112 kW). It is the most advanced and efficient compact waterblast pump in the industry. Combining the strength and durability of a proven power end workhorse with the unparalleled simplicity, serviceability and versatility of the UNx fluid end design, Jetstream bareshaft pumps are the best choice for those building their own system or replacing a complicated, worn or unreliable pump.

- Up to 150 horsepower (112 kW)
- Flow: 14.9 gpm (56 lpm) at 15,000 psi (1000 bar)
18.4 gpm (70 lpm) at 10,000 psi (700 bar)
23.2 gpm (88 lpm) at 9,000 psi (625 bar)
- Three Plunger (triplex) design



UNx Fluid End Features

- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**

UNx Power End Features

- Ductile iron power frame is the strongest in the industry
- Largest bearings of any comparable pump on the market

General Specs

Plungers			Connection Types*		Pump Speed Range
#	Stroke		Discharge Ports	Top Ports (Accessory)	
	in	mm			
3	3.00	76	1/2" NPT Fm	1/2" NPT Fm	150 – 600

* See details on all connection types beginning on page I-2.

Power End Specs

Max. Power Input		Maximum Frame Load		Total Weight		Pump Oil		
hp	kW	lb	N	lb	kg	Type	Capacity	
							gal	l
150	112	9,500	40260	970	440	80W-90	5	19

Fluid End Specs

Pump Part No.	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
	No.	Diameter		150 RPM		200 RPM		300 RPM		400 RPM		500 RPM				Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	hp	kW	gpm	lpm	psi	bar
51760	#7	.735	18.7	2.5	9	3.3	13	5.0	19	6.6	25	8.3	31	90	67	9.3	35	15,000	1000
51765	#8	.800	20.3	2.9	11	3.9	15	5.9	22	7.8	30	9.8	37	110	82	11.4	43	15,000	1000
														90	67	11.2	42	12,500	850
51770	#9	.900	22.9	3.7	14	5.0	19	7.4	28	9.9	38	12.4	47	150	112	14.9	56	15,000	1000
														125	93	14.9	56	12,500	850
														90	67	14.0	53	10,000	700
51775	#10	1.000	25.4	4.6	17	6.1	23	9.2	35	12.2	46	15.3	58	150	112	18.4	70	12,000	825
														125	93	18.4	70	10,000	700
														90	67	17.4	66	8,000	550
52275	#11	1.125	28.6	5.8	22	7.7	29	11.6	44	15.5	59	19.4	73	150	112	23.2	88	9,000	625
														125	93	23.2	88	8,000	550
														90	67	23.2	88	6,000	400

** Flow values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components.

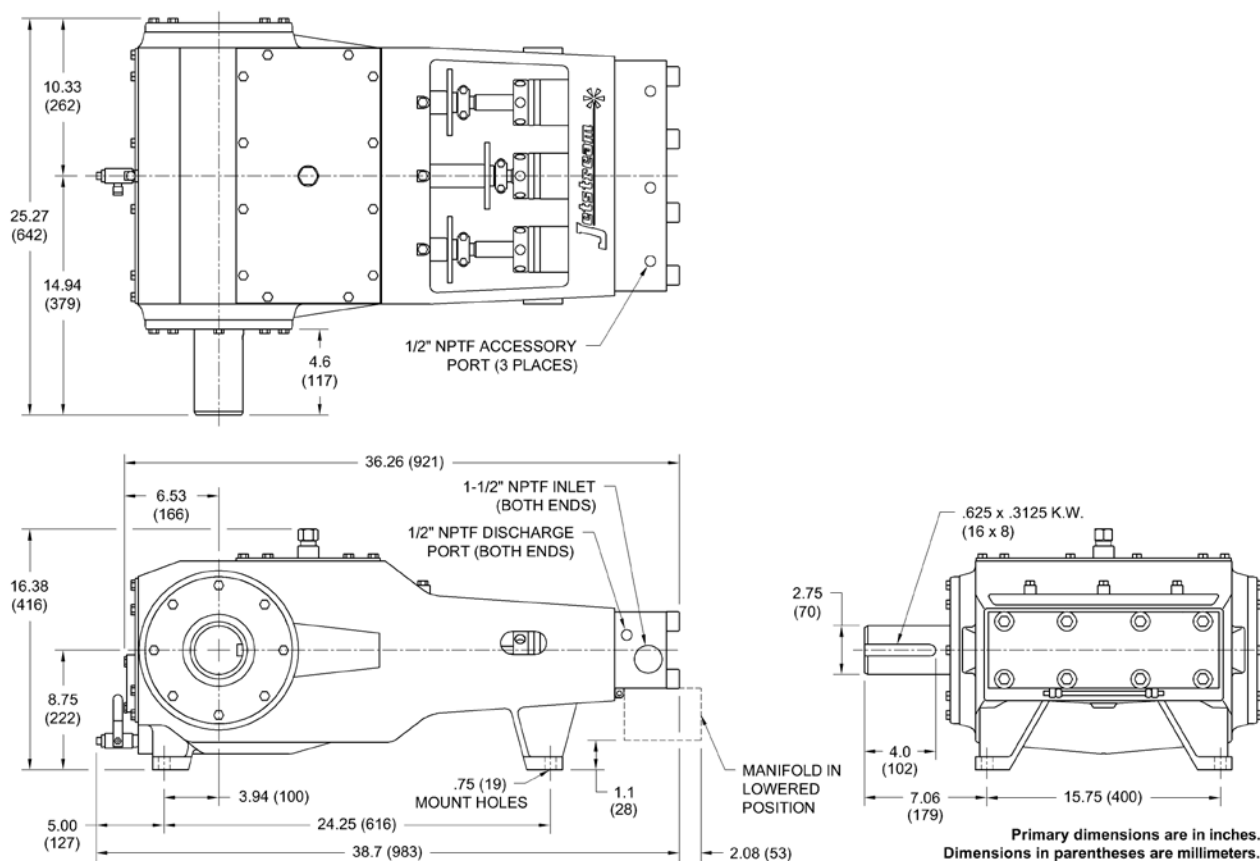
PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)



UNx® BARESHAFT PUMP MODEL 3015

PUMPS &
FLUID ENDS



Related Items

- 3015 UNx FLUID ENDS** — See page B-20 – B-21
- SEVERE SERVICE RELIEF VALVES** — See page G-2
- BYPASS VALVES** — See page C-13
- REGULATOR VALVES** — See page C-14
- FILTERS** — See page C-19
- PRESSURE GAUGES** — See page F-1

PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)

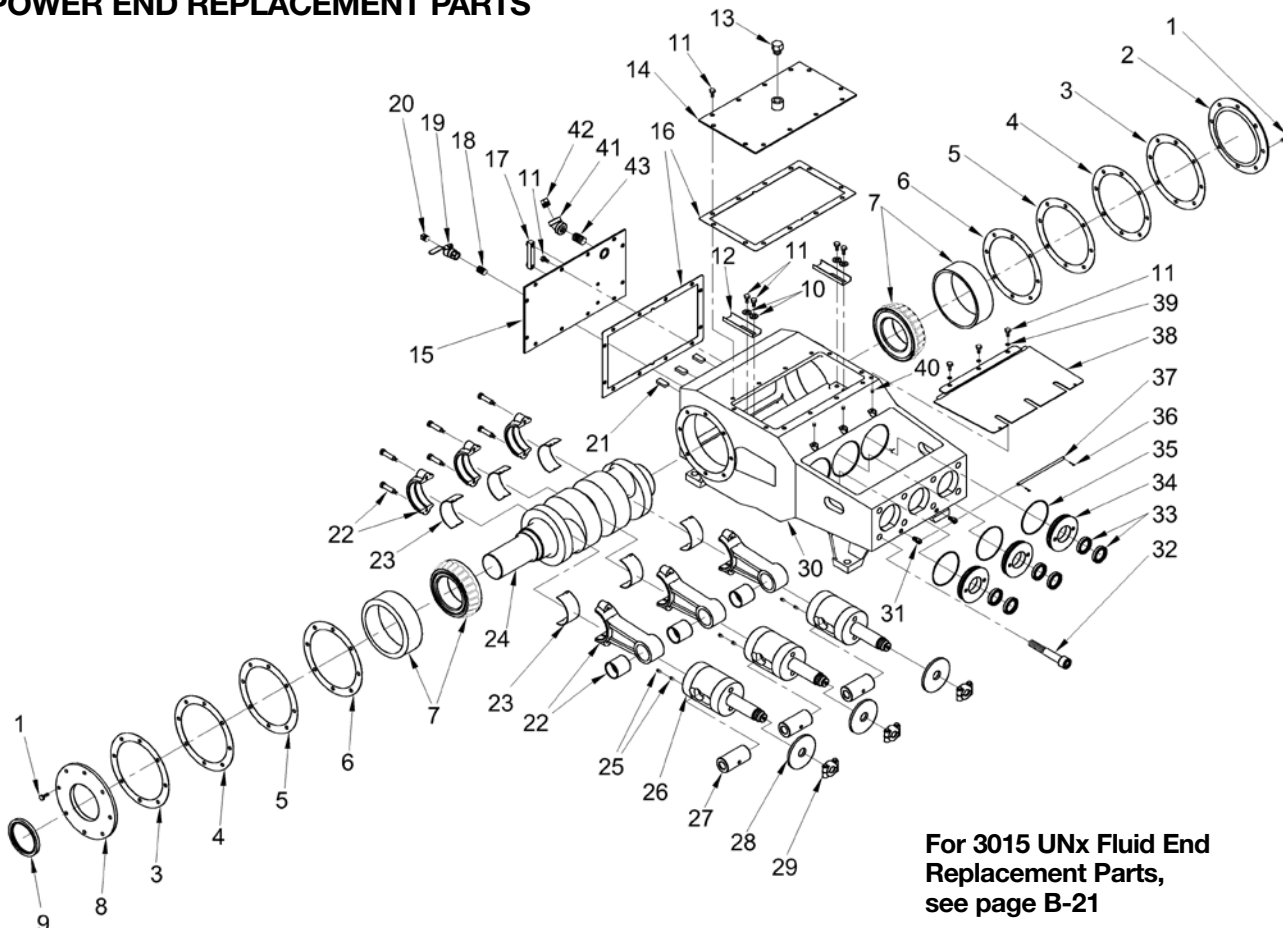


UNx® BARESHAFT PUMP

MODEL 3015

POWER END REPLACEMENT PARTS

PUMPS &
FLUID ENDS



**For 3015 UNx Fluid End
Replacement Parts,
see page B-21**

Item	Part No.	Description
1	26491	Capscrew
2	51733	Frame Cap, Outboard
3	26495	Shim, 0.02" Thick
4	26495-1	Shim, 0.01" Thick
5	26495-2	Shim, 0.0075" Thick
6	26495-3	Shim, 0.005" Thick
7	25541	Bearing & Race
8	51732	Frame Cap, Inboard
9	25428	Crankshaft Seal
10	25251	Washer
11	26492	Capscrew
12	26484	Oil Trough
13	26360	Breather Cap
14	50807	Plate, Top Cover
15	55252	Plate, Back Cover

Item	Part No.	Description
16	26496	Gasket, Cover Plate
17	28062	Gauge, Oil Level, 4"
17	71318	Gauge, Oil Level, 3.5"
18	25946	Nipple
19	27101	Ball Valve
20	25928	Plug
21	26705	Magnet
22	51749	Connecting Rod
23	26486	Bearing, Journal
24	25508	Crankshaft
25	25132	Setscrew
26	51738	Crosshead
27	52077	Pin, Crosshead
28	26623	Deflector
29	51737	Plunger Coupling

Item	Part No.	Description
30	51748	Power Frame
31	51659	Trunnion
32	26462	Capscrew
33	25536	Oil Seal
34	51712	Seal Plate
35	26478	O-Ring
36	26468	Cotter Pin
37	51666	Trunnion Rod
38	53681	Cover, Rod Box
39	25333	O-Ring
40	26483	Setscrew
41	29739	Elbow
42	29738	Plug
43	27728	Nipple

PUMPS & FLUID ENDS

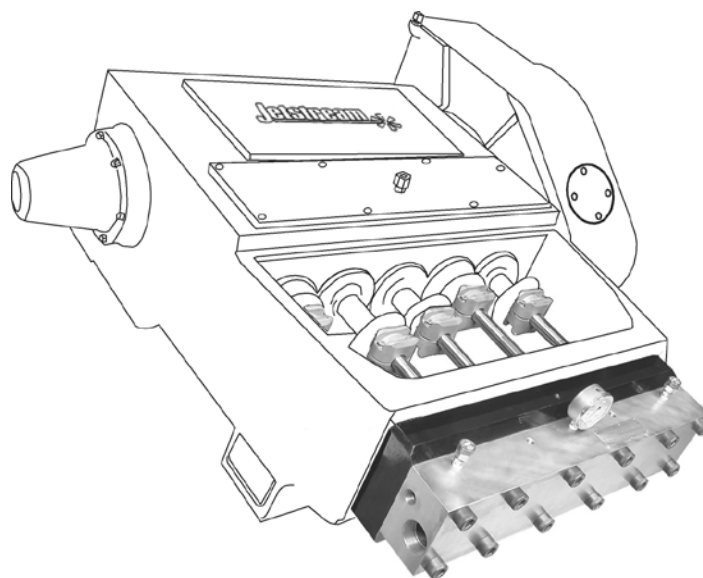
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END MODEL 5015Q

The UNx Fluid End is a cost-effective solution to increase the available operating pressure or range of pressures of an existing Jetstream 5000Q UNx Pump. Model 5015Q fluid ends deliver all of the benefits that define UNx Fluid Ends as the best in the industry.

- Bolt-on addition to 5000Q pumps
- 500 horsepower (373 kW)
- Flow: 50.6 gpm (192 lpm) at 15,000 psi (1000 bar)
77.5 gpm (293 lpm) at 10,000 psi (700 bar)
96.9 gpm (367 lpm) at 8,000 psi (550 bar)
- Five-Plunger (quintuplex) design
- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- See UNx Features and Benefits on page B-1
- Includes fittings and two rupture disc holders
- Pressure gauge and burst discs not included



PUMPS &
FLUID ENDS

General Specs

Plungers			Connection Types*		Pump Speed Range	Max. Power Input	
#	Stroke		Discharge Ports	Top Ports (Accessory)		RPM	hp
	in	mm					
5	5.00	127	Jetstream HHP	1/2" NPT Fml	100 – 413	500	373

* See details on all connection types beginning on page I-2.

Fluid End Specs

Fluid End Part No.	Plunger Size			Flow at Specified Pump Speeds**								Max. Flow / Operating Pressure			
	No.	Diameter		100 RPM		200 RPM		300 RPM		400 RPM		Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	psi	bar
54906	#12	1.200	30.48	12.2	46	24.5	93	36.7	139	49.0	185	50.6	192	15,000	1000
54873	#15	1.500	38.10	19.1	72	38.3	145	57.4	217	76.5	290	77.5	293	10,000	700
54872	#16	1.670	42.42	23.7	90	47.4	180	71.1	269	94.9	359	96.9	367	8,000	550

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Specified maximum flow rates are based on selected input powers and working pressures and constrained by power end limitations (pump speed, frame load, maximum input power). Actual output may vary depending on the performance specifications of the engine (or motor), drive sheave ratio, and actual working pressure.

Related Items

SEVERE SERVICE RELIEF VALVES – See page G-2

BURST DISCS – See page G-1

BYPASS VALVES – See page C-13

REGULATOR VALVES – See page C-14

PRESSURE GAUGES – See page F-1

Plunger Packages

Packages include only the items needed to convert an existing 5015Q pump to another 5015Q plunger size to achieve higher flow or pressure.

See page B-54



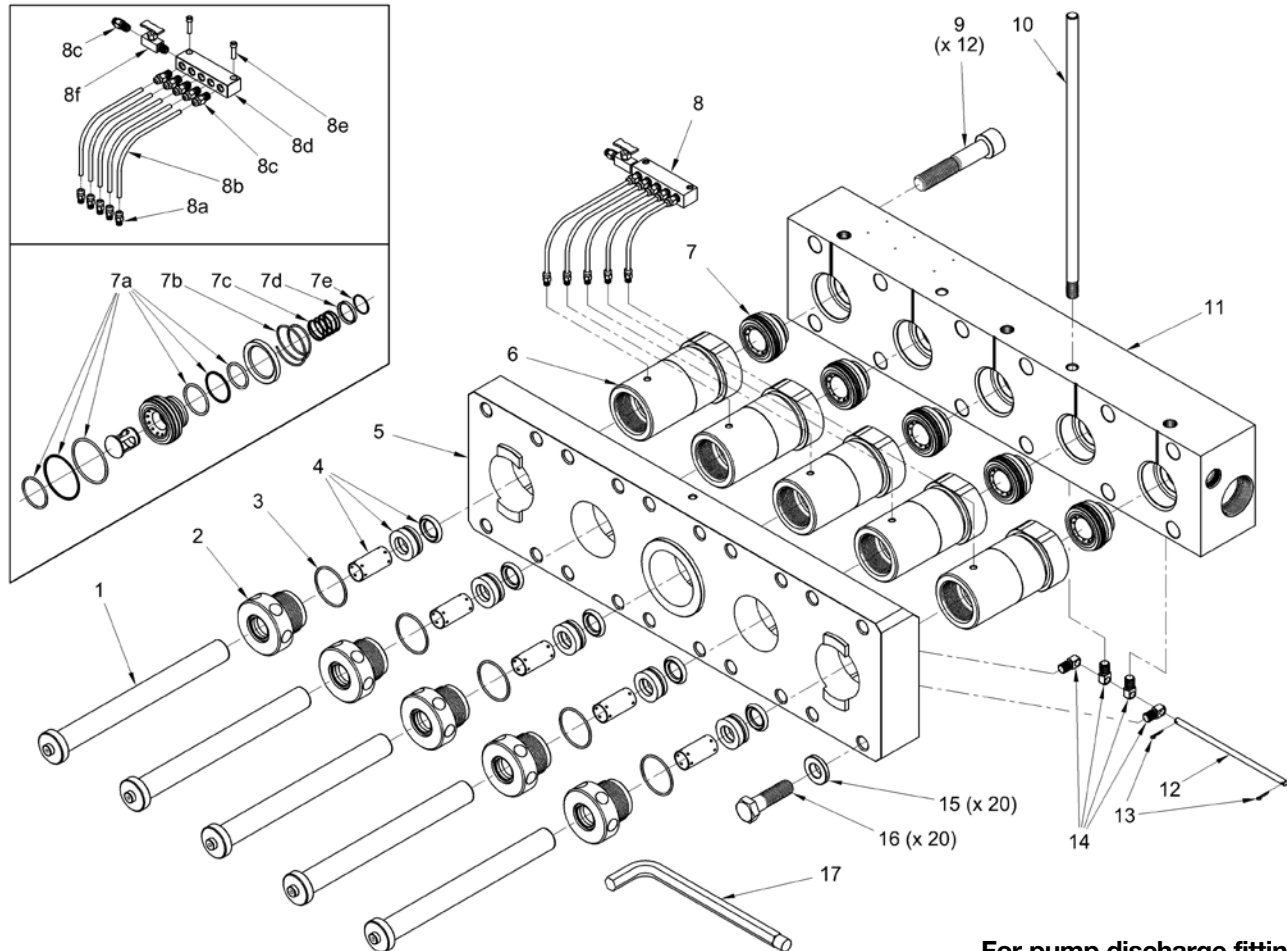
PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END MODEL 5015Q REPLACEMENT PARTS

PUMPS &
FLUID ENDS



For pump discharge fittings,
see page F-15

Item	Part No.	Description
1	54631	#12 Plunger
	54629	#15 Plunger
	54851	#16 Plunger
2	51707	#12 Gland Nut
	51746	#15 Gland Nut
	53316	#16 Gland Nut
3	26387	O-Ring, #12-#15 Gland Nut
	26930	O-Ring, #16 Gland Nut
4	50660	#12 Packing Set
	50662	#15 Packing Set
	53321	#16 Packing Set
5*	54627	Adapter Plate

Item	Part No.	Description
6	54628	#12 & #15 Stuffing Box
	54849	#16 Stuffing Box
7	52870	Uni-Valve
7a	52875	Uni-Valve Seal Kit
7b	27119	Discharge Valve Spring
7c	27118	Suction Valve Spring
7d	52879	Spring Retainer
7e	52878	Retaining Ring
8*	54690	Lube Harness Ay
8a*	27732	Tube Fitting, 1/8" NPT
8b*	27740	Tubing (Order in feet)
8c*	J70518	Tube Fitting, 1/4" NPT

Item	Part No.	Description
8d*	52494	Lube Manifold
8e*	26689	Capscrew
8f*	26876	Needle Valve
9*	26500	Manifold Bolt
10*	52114	Lifting Rod
11	54626	Manifold
12*	50295	Trunnion Rod
13*	26468	Cotter Pin
14	51659	Trunnion
15*	54638	Washer
16*	28900	Adapter Plate Bolt
17	50889	Pump Wrench

* Preexisting component included in drawing for convenience. Not included with new fluid ends.

PUMPS & FLUID ENDS

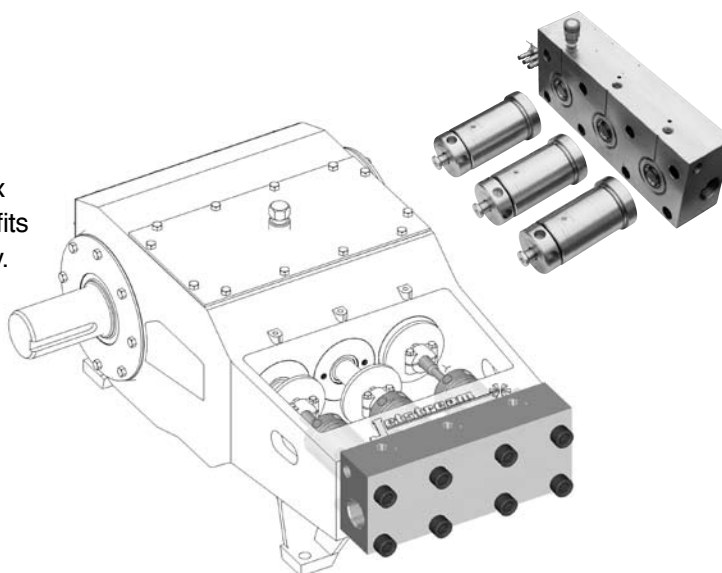
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END MODELS 4215HF & 3615HF

The UNx Fluid End is a cost-effective solution to increase the available operating pressure or range of pressures of an existing Jetstream 3600 or 4200 UNx Pump. These fluid end models deliver all of the benefits that define UNx Fluid Ends as the best in the industry.

- Bolt-on addition to 3615 and 4215 pumps
- 150 to 325 horsepower (112 to 242 kW)
- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**
- Includes hose adapters and one rupture disc holder
- Choose an additional rupture disc holder or a Severe Service Relief Valve as a second safety device
- Pressure gauge and burst discs not included



PUMPS &
FLUID ENDS

General Specs

Pump Model	Plungers			Connection Types*		Pump Speed Range
	#	Stroke		Discharge Ports	Top Ports (Accessory)	RPM
		in	mm			
4200	3	4.25	108	3/4" NPT Fml	1/2" NPT Fml	150 – 520
3600	3	3.60	92			150 – 550

* See details on all connection types beginning on page I-2.

4215HF Fluid Ends

Fluid End Part No.	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
	No.	Diameter		150 RPM		200 RPM		300 RPM		400 RPM		500 RPM				Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm			gpm	lpm	psi	bar
53090	#10	.980	24.89	6.2	24	8.3	32	12.5	47	16.7	63	20.8	79	210	157	21.7	82	15,000	1000
53095	#11	1.100	27.94	7.9	30	10.5	40	15.7	60	21.0	79	26.2	99	260	194	26.9	102	15,000	1000
														210	157	27.1	103	12,000	825
53100	#12	1.200	30.48	9.4	35	12.5	47	18.7	71	25.0	95	31.2	118	325	242	32.5	123	15,000	1000
														260	194	32.2	122	12,500	850
														210	157	32.5	123	10,000	700
53105	#13	1.335	33.91	11.6	44	15.5	59	23.2	88	30.9	117	38.6	146	325	242	40.2	152	12,500	850
														260	194	40.2	152	10,000	700
														210	157	40.2	152	8,000	550
53110	#15	1.500	38.10	14.6	55	19.5	74	29.3	111	39.0	148	48.8	185	325	242	50.4	191	10,000	700
														260	194	50.4	191	8,000	550
														210	157	50.1	190	6,500	450
53330	#16	1.670	42.42	18.1	69	24.2	92	36.3	137	48.4	183	60.5	229	325	242	62.9	238	8,000	550
														260	194	62.0	235	6,500	450
														210	157	62.9	238	5,000	350

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Specified maximum flow rates are based on selected input powers and working pressures and constrained by power end limitations (pump speed, frame load, maximum input power). Actual output may vary depending on the performance specifications of the engine (or motor), drive sheave ratio, and actual working pressure.

PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END MODELS 4215HF & 3615HF

PUMPS &
FLUID ENDS

3615HF Fluid Ends

Fluid End Part No.	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
	No.	Diameter		150 RPM		200 RPM		300 RPM		400 RPM		500 RPM				Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	hp	kW	gpm	lpm	psi	bar
53085	#9	.900	22.86	4.5	17	6.0	23	8.9	34	11.9	45	14.9	56	150	112	15.5	59	15,000	1000
53090	#10	.980	24.89	5.3	20	7.1	27	10.6	40	14.1	53	17.6	67	175	130	18.1	68	15,000	1000
														150	112	19.4	73	12,000	825
53095	#11	1.100	27.94	6.7	25	8.9	34	13.3	50	17.8	67	22.2	84	175	130	22.6	86	12,000	825
														150	112	23.3	88	10,000	700
53100	#12	1.200	30.48	7.9	30	10.6	40	15.9	60	21.2	80	26.4	100	175	130	27.1	103	10,000	700
														150	112	29.1	110	8,000	550
53105	#13	1.335	33.91	9.8	37	13.1	50	19.6	74	26.2	99	32.7	124	175	130	33.9	128	8,000	550
														150	112	35.8	136	6,500	450
53110	#15	1.500	38.10	12.4	47	16.5	63	24.8	94	33.1	125	41.3	156	175	130	45.2	171	6,000	400
														150	112	45.5	172	5,000	350

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Specified maximum flow rates are based on selected input powers and working pressures and constrained by power end limitations (pump speed, frame load, maximum input power). Actual output may vary depending on the performance specifications of the engine (or motor), drive sheave ratio, and actual working pressure.

Related Items

SEVERE SERVICE RELIEF VALVES – See page G-2

BURST DISCS – See page G-1

BYPASS VALVES – See page C-13

REGULATOR VALVES – See page C-14

PRESSURE GAUGES – See page F-1

Spare Parts Packages

In addition to the pump parts available on the following page, spare parts packages offer the most commonly needed replacement parts in a custom fit case.

See page B-53

Plunger Packages

Packages include only the items needed to convert an existing 3615 or 4215 pump to another plunger size to achieve higher flow or pressure.

See page B-54

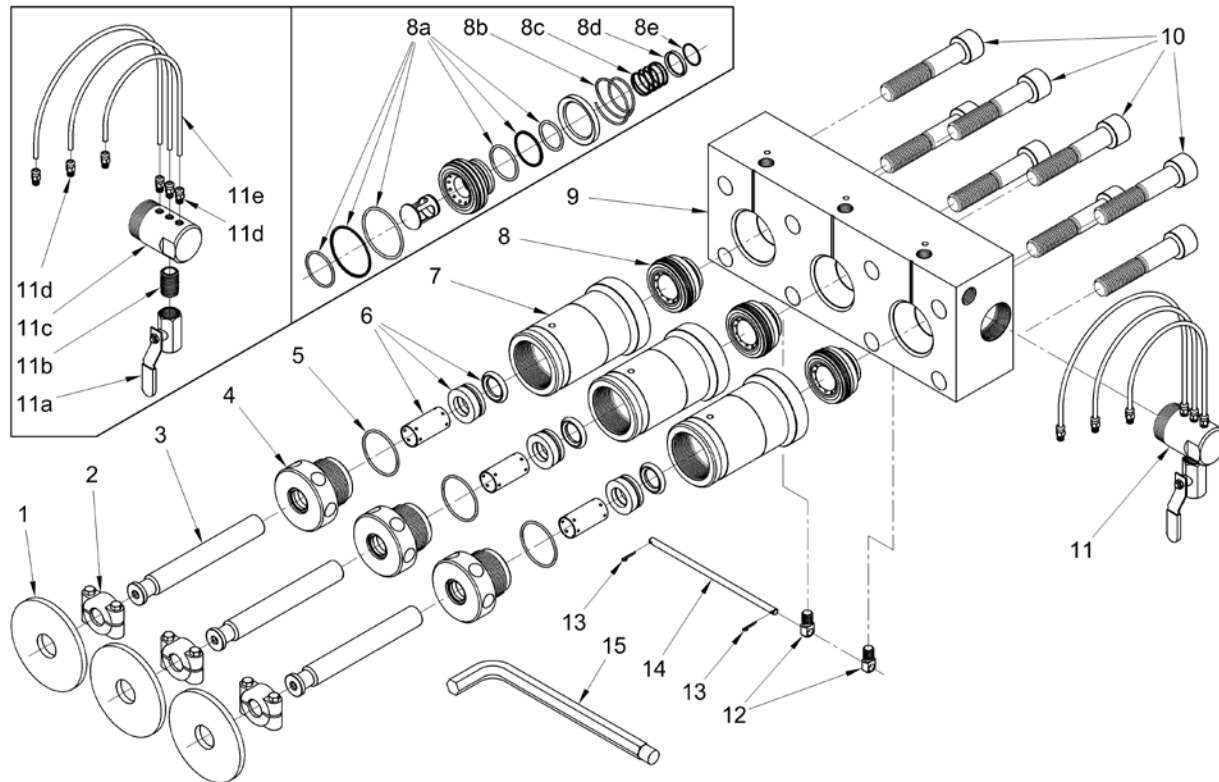


PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END MODELS 4215HF & 3615HF REPLACEMENT PARTS



NOTE: Parts listed on this page are components of current 4215HF & 3615HF fluid end models. For first generation fluid end models which utilize different stuffing boxes, valves and manifold, see the following page. "HF" and first generation models can be most easily distinguished by the part number stamped on the top face of the fluid end manifold. Current (HF) models use manifold part number 52864 while first generation fluid ends use manifold part number 50896.

Item	Part No.	Description
1*	26487	Deflector
2*	51736	Plunger Coupling
3	51808	#9 Plunger
	51721	#10 Plunger
	51722	#11 Plunger
	51723	#12 Plunger
	51724	#13 Plunger
	51726	#15 Plunger
	53314	#16 Plunger
4	51809	#9 Gland Nut
	51647	#10 Gland Nut
	51651	#11 Gland Nut
	51707	#12 Gland Nut
	51744	#13 Gland Nut
	51746	#15 Gland Nut
	53316	#16 Gland Nut

Item	Part No.	Description
5	26387	O-Ring (#9 to #15 Gland Nut)
	26930	O-Ring (#16 Gland Nut)
6	51802	#9 Packing Set
	50658	#10 Packing Set
	50659	#11 Packing Set
	50660	#12 Packing Set
	50661	#13 Packing Set
	50662	#15 Packing Set
	53321	#16 Packing Set
7	52872	#9, #10 & #11 Stuffing Box
	52873	#12, #13 & #15 Stuffing Box
	53313	#16 Stuffing Box
8	52870	Uni-Valve
8a	52875	Uni-Valve Seal Kit
8b	27119	Discharge Valve Spring
8c	27118	Suction Valve Spring

Item	Part No.	Description
8d	52879	Spring Retainer
8e	52878	Retaining Ring
9	52864	Manifold
10*	26500	Manifold Bolt
11	51975	Lube Harness
11a	27101	Ball Valve
11b	25946	Nipple
11c	55477	Lube Manifold
11d	27732	Tube Fitting
11e	27740	Tubing (Order in feet)
12	51659	Trunnion
13*	26468	Cotter Pin
14*	50295	Trunnion Rod
15	50889	Pump Wrench

* Power end component included in drawing for convenience. Not included with new fluid ends.

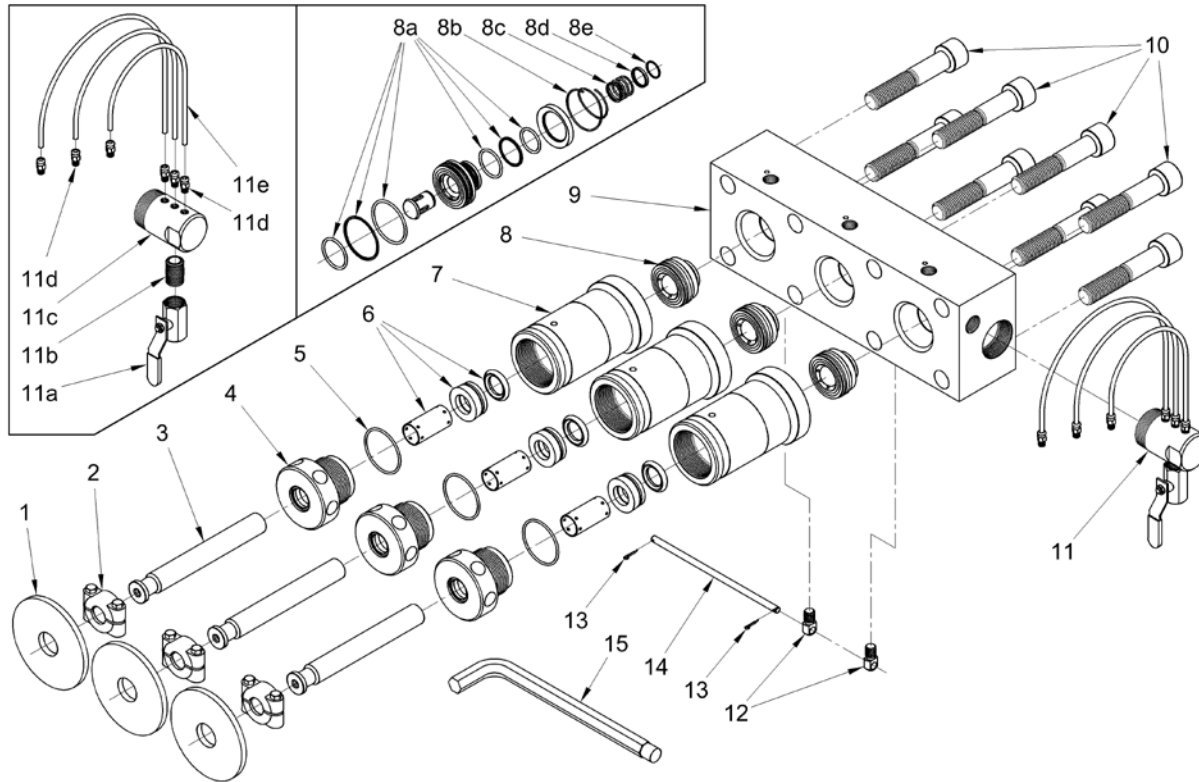
PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END MODELS 4215 & 3615 (GEN 1) REPLACEMENT PARTS

PUMPS &
FLUID ENDS



NOTE: Parts listed on this page are components of first generation 4215 & 3615 fluid end models no longer sold. These models utilize different stuffing boxes, valves and manifold than the current "HF" design. "HF" and first generation models can be most easily distinguished by the part number stamped on the top face of the fluid end manifold. Current (HF) models use manifold part number 52864 while first generation fluid ends featured on this page use manifold part number 50896.

Item	Part No.	Description	Item	Part No.	Description	Item	Part No.	Description
1*	26487	Deflector	5	26387	O-Ring	8e	25255	Retaining Ring
2*	51736	Plunger Coupling	6	51802	#9 Packing Set	9	50896	Manifold
3	51808	#9 Plunger		50658	#10 Packing Set	10*	26500	Manifold Bolt
	51721	#10 Plunger		50659	#11 Packing Set	11	51975	Lube Harness
	51722	#11 Plunger		50660	#12 Packing Set	11a	27101	Ball Valve
	51723	#12 Plunger		50661	#13 Packing Set	11b	25946	Nipple
	51724	#13 Plunger		50662	#15 Packing Set	11c	55477	Lube Manifold
	51726	#15 Plunger		50297	#9, #10 & #11 Stuffing Box	11d	27732	Tube Fitting
4	51809	#9 Gland Nut	7	50299	#12, #13 & #15 Stuffing Box	11e	27740	Tubing
	51647	#10 Gland Nut	8	50365	Uni-Valve	12	51659	Trunnion
	51651	#11 Gland Nut	8a	50370	Uni-Valve Seal Kit	13*	26468	Cotter Pin
	51707	#12 Gland Nut	8b	25060	Discharge Valve Spring	14*	50295	Trunnion Rod
	51744	#13 Gland Nut	8c	25059	Suction Valve Spring	15	50889	Pump Wrench
	51746	#15 Gland Nut	8d	50303	Spring Retainer			

* Power end component included in drawing for convenience. Not included with new fluid ends.

PUMPS & FLUID ENDS

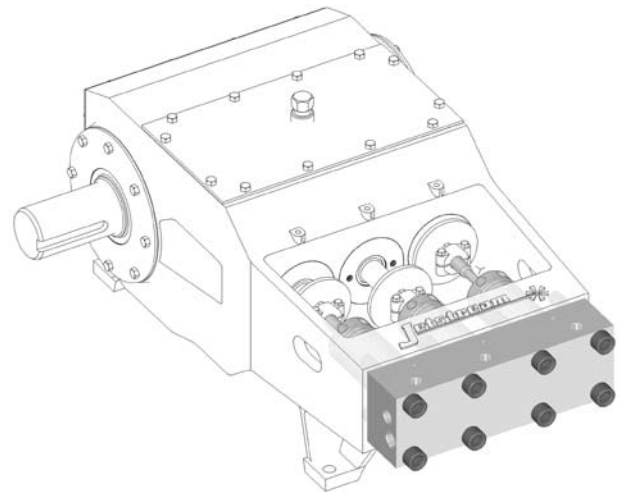
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END MODEL 3015

The UNx Fluid End is a cost-effective solution to increase the available operating pressure or range of pressures of an existing Jetstream 3000 UNx Pump. The model 3015 delivers all of the benefits that define UNx Fluid Ends as the best in the industry.

- Bolt-on addition to 3000 pumps
- Up to 150 horsepower
- Wide range of flow and pressure combinations
- Three plunger (triplex) design
- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**
- Includes hose adapters and one rupture disc holder
- Choose an additional rupture disc holder or a Severe Service Relief Valve as a second safety device
- Pressure gauge and burst discs not included



PUMPS &
FLUID ENDS

General Specs

Plungers			Connection Types*		Pump Speed Range	Max. Power Input	
#	Stroke		Discharge Ports	Top Ports (Accessory)			
	in	mm			RPM	hp	kW
3	3.00	76	1/2" NPT Fml	1/2" NPT Fml	150 – 600	150	112

* See details on all connection types beginning on page I-2.

Related Items

SEVERE SERVICE RELIEF VALVES – See page G-2

BURST DISCS – See page G-1

BYPASS VALVES – See page C-13

REGULATOR VALVES – See page C-14

PRESSURE GAUGES – See page F-1

PLUNGER PACKAGES – See page B-54

SPARE PARTS PACKAGES – See page B-53

Fluid End Specs

Fluid End Part No.	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
	No.	Diameter		150 RPM		200 RPM		300 RPM		400 RPM		500 RPM				Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	hp	kW	gpm	lpm	psi	bar
52055	#7	.735	18.7	2.5	9	3.3	13	5.0	19	6.6	25	8.3	31	90	67	9.3	35	15,000	1000
52060	#8	.800	20.3	2.9	11	3.9	15	5.9	22	7.8	30	9.8	37	110	82	11.4	43	15,000	1000
														90	67	11.2	42	12,500	850
52065	#9	.900	22.9	3.7	14	5.0	19	7.4	28	9.9	38	12.4	47	150	112	14.9	56	15,000	1000
														125	93	14.9	56	12,500	850
														90	67	14.0	53	10,000	700
52070	#10	1.000	25.4	4.6	17	6.1	23	9.2	35	12.2	46	15.3	58	150	112	18.4	70	12,000	825
														125	93	18.4	70	10,000	700
														90	67	17.4	66	8,000	550
52270	#11	1.125	28.6	5.8	22	7.7	29	11.6	44	15.5	59	19.4	73	150	112	23.2	88	9,000	625
														125	93	23.2	88	8,000	550
														90	67	23.2	88	6,000	400

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Performance data is based on power end specifications published by the original equipment manufacturer; however, some power ends may differ from those used to determine the values above. Contact a Jetstream Solutions Provider for help with fluid end selection.

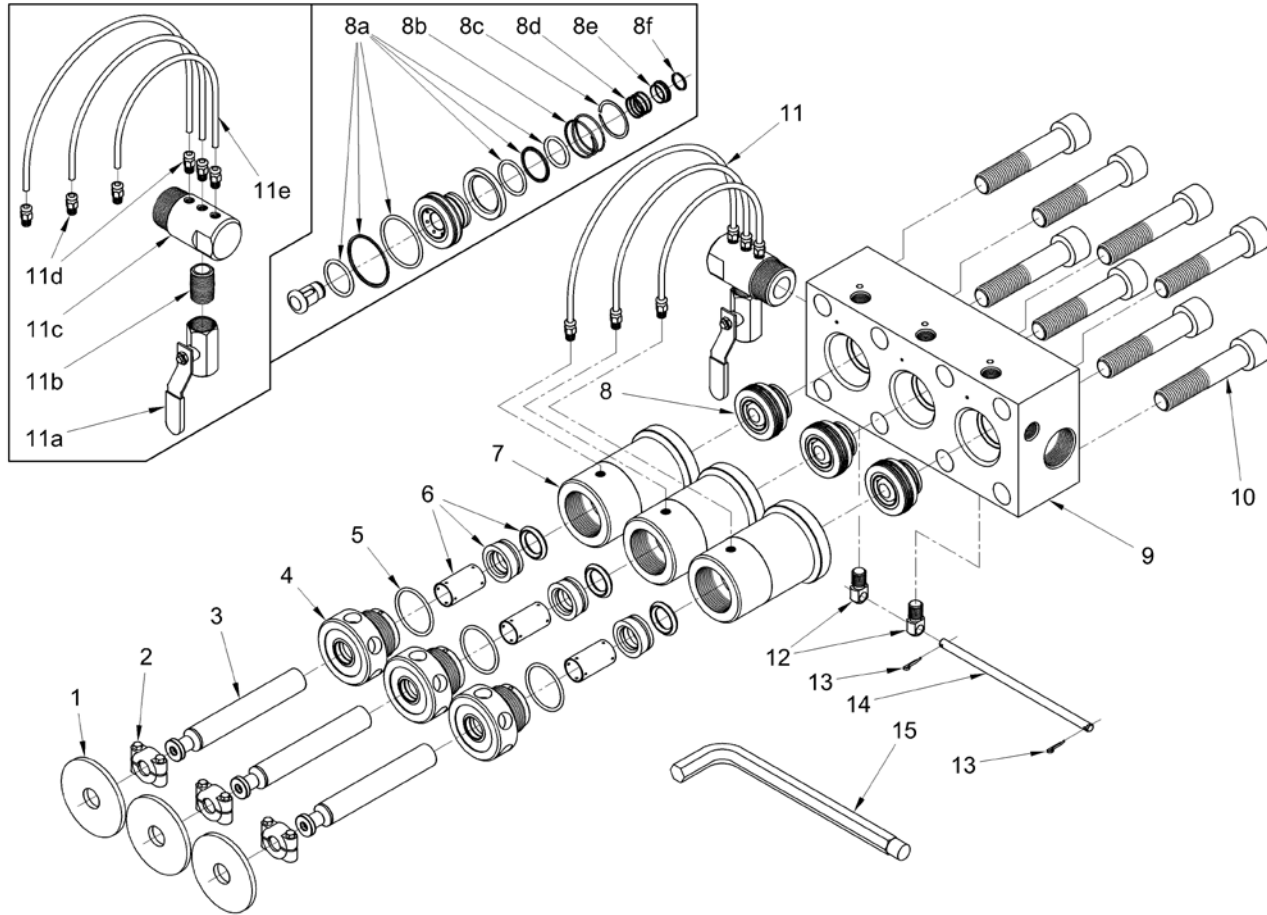
PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END MODELS 3015 REPLACEMENT PARTS

PUMPS &
FLUID ENDS



Item	Part No.	Description
1*	26623	Deflector
2*	51737	Plunger Coupling
3	51831	#7 Plunger
	51741	#8 Plunger
	51742	#9 Plunger
	51743	#10 Plunger
	52229	#11 Plunger
4	51617	#7 Gland Nut
	51619	#8 Gland Nut
	51621	#9 Gland Nut
	51623	#10 Gland Nut
	52231	#11 Gland Nut
5	26416	O-Ring
6	51689	#7 Packing Set

Item	Part No.	Description
6	51691	#8 Packing Set
	51674	#9 Packing Set
	51697	#10 Packing Set
	52233	#11 Packing Set
7	51611	#7, #8 Stuffing Box
	51671	#9, #10 Stuffing Box
	52232	#11 Stuffing Box
8	51675	Uni-Valve
8a	50034	Uni-Valve Seal Kit
8b	26476	Discharge Valve Spring
8c	26470	Retaining Ring
8d	26472	Suction Valve Spring
8e	51664	Spring Retainer

Item	Part No.	Description
8f	26474	Retaining Ring
9	51672	Manifold
10*	26462	Manifold Bolt
11	51970	Lube Harness
11a	27101	Ball Valve
11b	25946	Nipple
11c	53242	Lube Manifold
11d	27732	Tube Fitting
11e	27740	Tubing (Order in feet)
12	51659	Trunnion
13*	26468	Cotter Pin
14*	51666	Trunnion Rod
15	50064	Pump Wrench

* Power end component included in drawing for convenience. Not included with new fluid ends.

PUMPS & FLUID ENDS

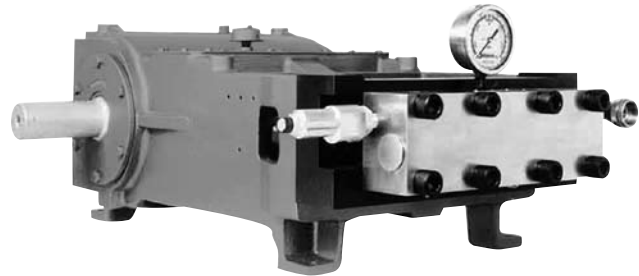
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES MODEL 4215N

The Jetstream UNx Fluid End Upgrade is ideal for replacing a damaged, costly, or unreliable fluid end. It is also a cost-effective solution to increase the available operating pressure or range of pressures for those who have already converted to the UNx. The upgrade delivers all of the benefits of the UNx Fluid End design.

- Three plunger (triplex) design
- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**
- Clamp-style plungers
- Includes hose adapters and one rupture disc holder
- Choose an additional rupture disc holder or a Severe Service Relief Valve as a second safety device
- Pressure gauge and burst discs not included
- Bolt-on installation requires only minutes
- Once upgraded to the UNx design, the unit can be supplemented with additional fluid ends to expand its range of operating pressures.



Fits the following pump models:

NLB — 10150, 10200, 10225 15203, 20153, 20156, 20203, 20225, 24155, 24205, 24225, 40201, and others

Union — TD-120 (power end)

General Specs

Plungers			Connection Types*		
#	Stroke		Discharge Ports	Top Ports (Accessory)	Supply Port
	in	mm			
3	4.25	108	3/4" NPT Fml	1/2" NPT Fml	2" NPT Fml

* See details on all connection types beginning on page I-2.

Related Items

SEVERE SERVICE RELIEF VALVES – See page G-2

BURST DISCS – See page G-1

PRESSURE GAUGES – See page F-1

PLUNGER PACKAGES – See page B-54

SPARE PARTS PACKAGES – See page B-53

PUMP TOOLS – See page B-55

Fluid End Specs

Part No.	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
	No.	Diameter		150 RPM		200 RPM		300 RPM		400 RPM		500 RPM				Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	hp	kW	gpm	lpm	psi	bar
51800	#10	.980	24.89	6.2	24	8.3	32	12.5	47	16.7	63	20.8	79	200	149	20.7	78	15,000	1000
														160	119	16.5	62	15,000	1000
51805	#11	1.100	27.94	7.9	30	10.5	40	15.7	60	21.0	79	26.2	99	250	186	25.8	98	15,000	1000
														200	149	25.8	98	12,000	825
														160	119	20.7	78	12,000	825
51285	#12	1.200	30.48	9.4	35	12.5	47	18.7	71	25.0	95	31.2	118	250	186	31.2	118	12,000	825
														200	149	31.0	117	10,000	700
														160	119	24.8	94	10,000	700
51810	#13	1.335	33.91	11.6	44	15.5	59	23.2	88	30.9	117	38.6	146	250	186	38.6	146	10,000	700
														200	149	38.6	146	8,000	550
														160	119	30.9	117	8,000	550
51815	#15	1.500	38.10	14.6	55	19.5	74	29.3	111	39.0	148	48.8	185	250	186	48.4	183	8,000	550
														200	149	48.8	185	6,000	400
														160	119	39.0	148	6,000	400
J55720	#16	1.670	42.42	18.1	69	24.2	92	36.3	137	48.4	183	60.5	229	250	186	59.6	226	6,500	450
														200	149	60.5	229	5,000	350
														160	119	48.4	183	5,000	350

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Performance data is based on power end specifications published by the original equipment manufacturer; however, some power ends may differ from those used to determine the values above. Contact a Jetstream Solutions Provider for help with fluid end selection.

PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)

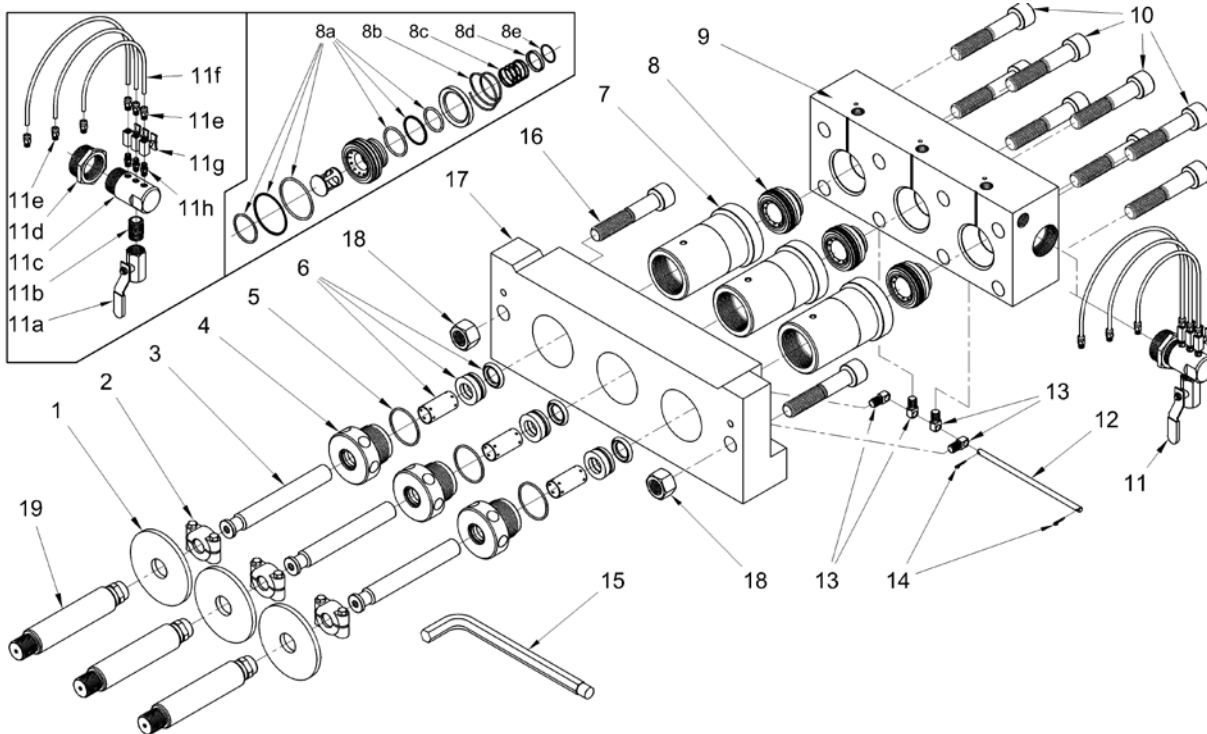


UNx® FLUID END UPGRADES

MODEL 4215N

REPLACEMENT PARTS

PUMPS &
FLUID ENDS



NOTE: Parts listed on this page are for current 4215N fluid end models. For first generation fluid end models, which utilize different stuffing boxes, valves, and manifold, see the following page. Models can be most easily distinguished by the part number stamped on the top face of the fluid end manifold. Current models use manifold part number 52864 while first generation fluid ends use manifold part number 50896.

Item	Part No.	Description
1	26487	Deflector
2	51736	Plunger Coupling
3	51721	#10 Plunger
	51722	#11 Plunger
	51723	#12 Plunger
	51724	#13 Plunger
	51726	#15 Plunger
	53314	#16 Plunger
4	51647	#10 Gland Nut
	51651	#11 Gland Nut
	51707	#12 Gland Nut
	51744	#13 Gland Nut
	51746	#15 Gland Nut
	53316	#16 Gland Nut
5	26387	O-Ring (#9 to #15 Gland Nut)
	26930	O-Ring (#16 Gland Nut)
6	50658	#10 Packing Set

Item	Part No.	Description
6	50659	#11 Packing Set
	50660	#12 Packing Set
	50661	#13 Packing Set
	50662	#15 Packing Set
	53321	#16 Packing Set
7	52872	#10 & #11 Stuffing Box
	52873	#12, #13 & #15 Stuffing Box
	53313	#16 Stuffing Box
8	52870	Uni-Valve
8a	52875	Uni-Valve Seal Kit
8b	52862	Discharge Valve Spring
8c	52861	Suction Valve Spring
8d	52879	Spring Retainer
8e	52878	Retaining Ring
9	52864	Manifold
10	25607	Manifold Bolt
11	51955	Lube Harness

Item	Part No.	Description
11a	27101	Ball Valve
11b	25946	Nipple
11c	53242	Lube Manifold
11d	26802	Reducing Bushing
11e	27732	Tubing Fitting
11f	27740	Tubing (Order in feet)
11g	27475	Needle Valve
11h	26465	Nipple
12	50295	Trunnion Rod
13	51659	Trunnion
14	26468	Cotter Pin
15	50889	Pump Wrench
16	26500	Adapter Plate Bolt
17	50293	Adapter Plate
18	26669	Adapter Plate Nut
19	51766	Crosshead Stub

PUMPS & FLUID ENDS

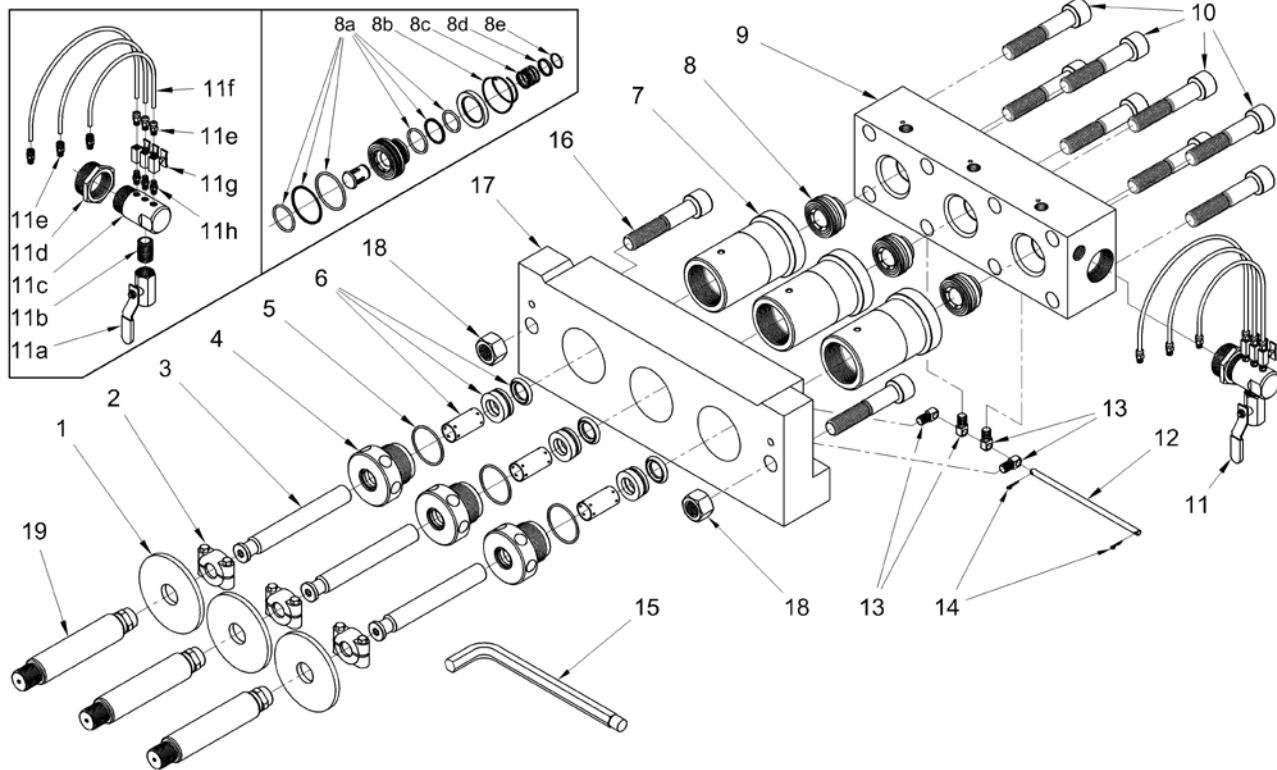
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES

MODEL 4215N (GEN 1)

REPLACEMENT PARTS



NOTE: Parts listed on this page are for first generation 4215N fluid end models no longer sold. These models utilize different stuffing boxes, valves, and manifold than the current design. Models can be most easily distinguished by the part number stamped on the top face of the fluid end manifold. Current models use manifold part number 52864 while first generation fluid ends featured on this page use manifold part number 50896.

Item	Part No.	Description	Item	Part No.	Description	Item	Part No.	Description
1	26487	Deflector	6	50660	#12 Packing Set	11b	25946	Nipple
2	51736	Plunger Coupling		50661	#13 Packing Set	11c	53242	Lube Manifold
3	51721	#10 Plunger		50662	#15 Packing Set	11d	26802	Reducing Bushing
	51722	#11 Plunger	7	50297	#10 & #11 Stuffing Box	11e	27732	Tubing Fitting
	51723	#12 Plunger		50299	#12, #13 & #15 Stuffing Box	11f	27740	Tubing (Order in feet)
	51724	#13 Plunger	8	50365	Uni-Valve	11g	27475	Needle Valve
	51726	#15 Plunger	8a	50370	Uni-Valve Seal Kit	11h	26465	Nipple
4	51647	#10 Gland Nut	8b	25060	Discharge Valve Spring	12	50295	Trunnion Rod
	51651	#11 Gland Nut	8c	25059	Suction Valve Spring	13	51659	Trunnion
	51707	#12 Gland Nut	8d	50303	Spring Retainer	14	26468	Cotter Pin
	51744	#13 Gland Nut	8e	25255	Retaining Ring	15	50889	Pump Wrench
	51746	#15 Gland Nut	9	50896	Manifold	16	26500	Adapter Plate Bolt
5	26387	O-Ring	10	25607	Manifold Bolt	17	50293	Adapter Plate
6	50658	#10 Packing Set	11	51955	Lube Harness	18	26669	Adapter Plate Nut
	50659	#11 Packing Set	11a	27101	Ball Valve	19	51766	Crosshead Stub

PUMPS & FLUID ENDS

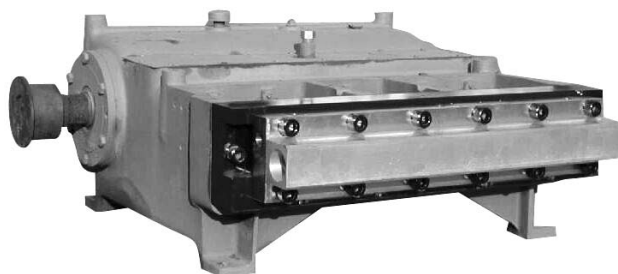
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES MODEL 4215QN

The Jetstream UNx Fluid End Upgrade is ideal for replacing a damaged, costly, or unreliable fluid end. It is also a cost-effective solution to increase the available operating pressure or range of pressures for those who have already converted to the UNx. The upgrade delivers all of the benefits of the UNx Fluid End design.

- Five plunger (quintuplex) design
- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**
- Clamp-style plungers
- Includes hose adapters and one rupture disc holder
- Choose an additional rupture disc holder or a Severe Service Relief Valve as a second safety device
- Pressure gauge and burst discs not included
- Bolt-on installation requires only minutes
- Once upgraded to the UNx design, the unit can be supplemented with additional fluid ends to expand its range of operating pressures.



Fits the following pump models:

NLB — 10250, 20253, 36250

Union — QD-200 (power end)

General Specs

Plungers			Connection Types*		
#	Stroke		Discharge Ports	Top Ports (Accessory)	Supply Port
	in	mm			
5	4.25	108	3/4" NPT Fml	1/2" NPT Fml	2" NPT Fml

* See details on all connection types beginning on page I-2.

Related Items

SEVERE SERVICE RELIEF VALVES – See page G-2

BURST DISCS – See page G-1

PRESSURE GAUGES – See page F-1

PLUNGER PACKAGES – See page B-54

PUMP TOOLS – See page B-55

Fluid End Specs

Part No.	Plunger Size			Flow at Specified Pump Speeds**								Power Input		Max. Flow / Pressure			
	No.	Diameter		100 RPM		200 RPM		300 RPM		400 RPM				Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	hp	kW	gpm	lpm	psi	bar
53555	#10	.980	24.89	6.9	26	13.9	53	20.8	79	27.8	105	275	205	27.8	105	15,000	1000
53560	#11	1.100	27.94	8.7	33	17.5	66	26.2	99	35.0	132	275	205	35.0	132	12,000	825
53565	#12	1.200	30.48	10.4	39	20.8	79	31.2	118	41.6	157	275	205	41.6	157	10,000	700
53585	#13	1.335	33.91	12.9	49	25.8	98	38.6	146	51.5	195	275	205	51.5	195	8,000	550
53575	#15	1.500	38.10	16.3	62	32.5	123	48.8	185	65.1	246	275	205	65.1	246	6,500	450

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Performance data is based on power end specifications published by the original equipment manufacturer; however, some power ends may differ from those used to determine the values above. Contact a Jetstream Solutions Provider for help with fluid end selection.

PUMPS & FLUID ENDS

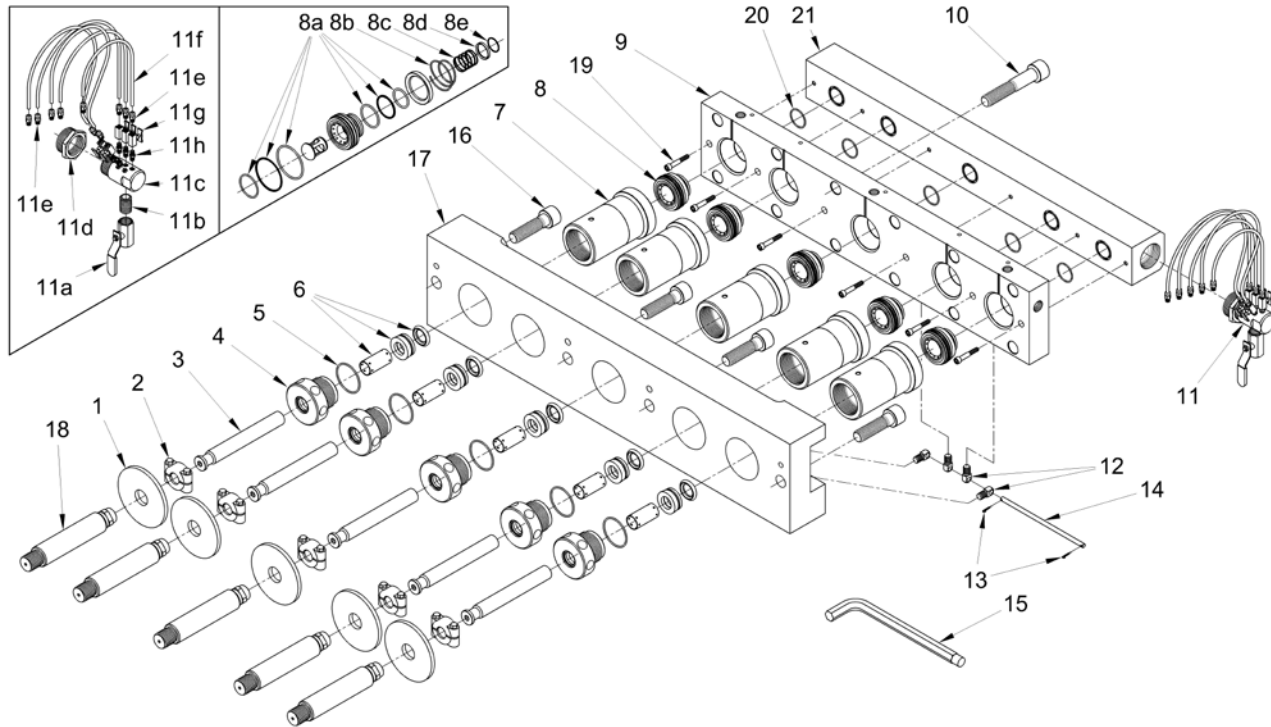
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES

MODEL 4215QN

REPLACEMENT PARTS



Item	Part No.	Description
1	26487	Deflector
2	51736	Plunger Coupling
3	51721	#10 Plunger
	51722	#11 Plunger
	51723	#12 Plunger
	51724	#13 Plunger
	51726	#15 Plunger
4	51647	#10 Gland Nut
	51651	#11 Gland Nut
	51707	#12 Gland Nut
	51744	#13 Gland Nut
	51746	#15 Gland Nut
5	26387	O-Ring
6	50658	#10 Packing Set
	50659	#11 Packing Set
	50660	#12 Packing Set

Item	Part No.	Description
6	50661	#13 Packing Set
	50662	#15 Packing Set
7	52872	#10 & #11 Stuffing Box
	52873	#12, #13 & #15 Stuffing Box
8	52870	Uni-Valve
8a	52875	Uni-Valve Seal Kit
8b	52862	Discharge Valve Spring
8c	52861	Suction Valve Spring
8d	52879	Spring Retainer
8e	52878	Retaining Ring
9	53598	Manifold
10	27550	Manifold Bolt
11	53590	Lube Harness
11a	27101	Ball Valve
11b	25946	Nipple
11c	53793	Lube Manifold

Item	Part No.	Description
11d	27729	Reducing Bushing
11e	27732	Tubing Fitting
11f	27740	Tubing (Order in feet)
11g	27475	Needle Valve
11h	26465	Nipple
12	51659	Trunnion
13	26468	Cotter Pin
14	50295	Trunnion Rod
15	50889	Pump Wrench
16	27550	Adapter Plate Bolt
17	53602	Adapter Plate
18	51766	Crosshead Stub
19	27551	Suction Manifold Bolt
20	25566	O-Ring
21	53601	Suction Manifold

PUMPS & FLUID ENDS

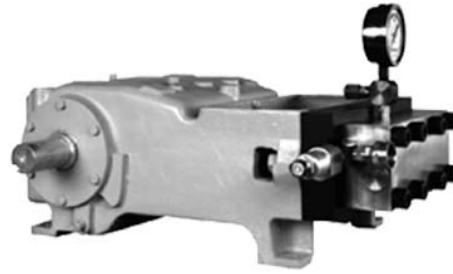
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES MODEL 3015N

The Jetstream UNx Fluid End Upgrade is ideal for replacing a damaged, costly, or unreliable fluid end. It is also a cost-effective solution to increase the available operating pressure or range of pressures for those who have already converted to the UNx. The upgrade delivers all of the benefits of the UNx Fluid End design.

- Three plunger (triplex) design
- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**
- Threaded plungers
- Includes hose adapters and one rupture disc holder
- Choose an additional rupture disc holder or a Severe Service Relief Valve as a second safety device
- Pressure gauge and burst discs not included
- Bolt-on installation requires only minutes
- Once upgraded to the UNx design, the unit can be supplemented with additional fluid ends to expand its range of operating pressures.



Fits the following pump models:

NLB — 1012C, 1012D

Union — TD-60 (power end)

General Specs

Plungers			Connection Types*		
#	Stroke		Discharge Ports	Top Ports (Accessory)	Supply Port
	in	mm			
3	3.00	76	1/2" NPT Fml	1/2" NPT Fml	1-1/2" NPT Fml

* See details on all connection types beginning on page I-2.

Related Items

SEVERE SERVICE RELIEF VALVES – See page G-2

BURST DISCS – See page G-1

PRESSURE GAUGES – See page F-1

PLUNGER PACKAGES – See page B-54

SPARE PARTS PACKAGES – See page B-53

PUMP TOOLS – See page B-55

Fluid End Specs

Part No.	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
	No.	Diameter		150 RPM		200 RPM		300 RPM		400 RPM		500 RPM				Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	hp	kW	gpm	lpm	psi	bar
51720	#7	.735	18.67	2.5	9	3.3	13	5.0	19	6.6	25	8.3	31	75	56	7.8	30	15,000	1000
51725	#8	.800	20.32	2.9	11	3.9	15	5.9	22	7.8	30	9.8	37	100	75	10.2	39	15,000	1000
														75	56	9.3	35	12,500	850
51730	#9	.900	22.86	3.7	14	5.0	19	7.4	28	9.9	38	12.4	47	100	75	12.9	49	12,000	825
														75	56	11.6	44	10,000	700
51735	#10	1.000	25.40	4.6	17	6.1	23	9.2	35	12.2	46	15.3	58	100	75	15.5	59	10,000	700
														75	56	14.5	55	8,000	550
52265	#11	1.125	28.58	5.8	22	7.7	29	11.6	44	15.5	59	19.4	73	100	75	19.2	73	8,000	550
														75	56	17.9	68	6,500	450

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Performance data is based on power end specifications published by the original equipment manufacturer; however, some power ends may differ from those used to determine the values above. Contact a Jetstream Solutions Provider for help with fluid end selection.

PUMPS & FLUID ENDS

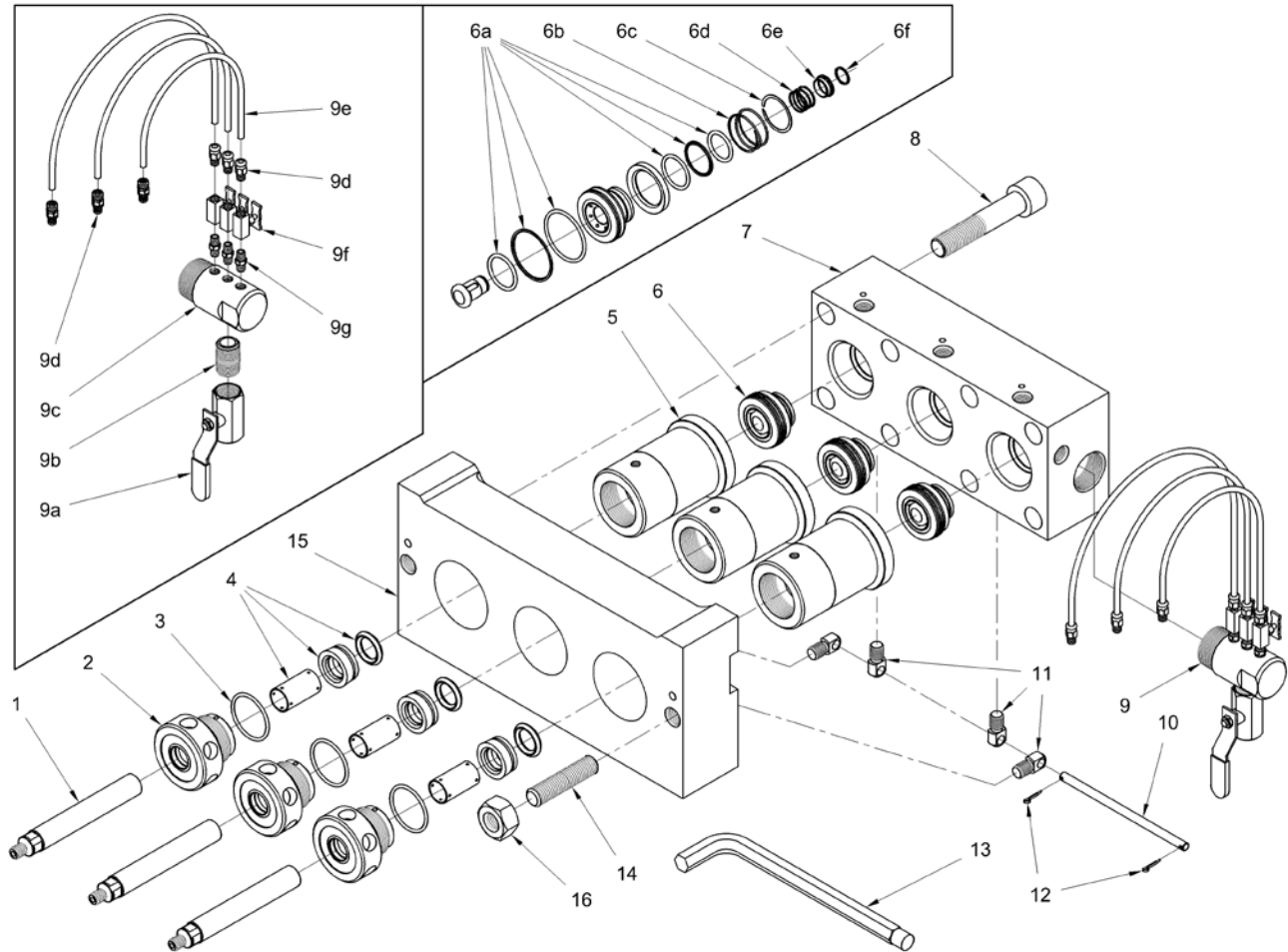
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES

MODEL 3015N

REPLACEMENT PARTS



Item	Part No.	Description
1	51690	#7 Plunger
	51696	#8 Plunger
	51667	#9 Plunger
	51694	#10 Plunger
	52983	#11 Plunger
2	51617	#7 Gland Nut
	51619	#8 Gland Nut
	51621	#9 Gland Nut
	51623	#10 Gland Nut
	52231	#11 Gland Nut
3	26416	O-Ring
4	51689	#7 Packing Set
	51691	#8 Packing Set
	51674	#9 Packing Set
	51697	#10 Packing Set

Item	Part No.	Description
4	52233	#11 Packing Set
5	51611	#7 & #8 Stuffing Box
	51671	#9 & #10 Stuffing Box
	52232	#11 Stuffing Box
6	51675	Uni-Valve
6a	50034	Uni-Valve Seal Kit
6b	26476	Discharge Valve Spring
6c	26470	Retaining Ring
6d	26472	Suction Valve Spring
6e	51664	Spring Retainer
6f	26474	Retaining Ring
7	51672	Manifold
8	26462	Manifold Bolt
9	51695	Lube Harness
9a	27101	Ball Valve

Item	Part No.	Description
9b	25946	Nipple
9c	53242	Lube Manifold
9d	27732	Tubing Fitting
9e	27740	Tubing (Order in feet)
9f	27475	Needle Valve
9g	26465	Nipple
10	51666	Trunnion Rod
11	51659	Trunnion
12	26468	Cotter Pin
13	50064	Pump Wrench
14	28779	Adapter Plate Stud
15	51692	Adapter Plate
16	25864	Adapter Plate Nut

PUMPS & FLUID ENDS

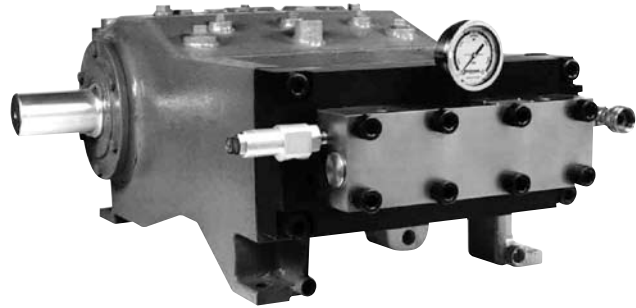
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES MODEL 4515B

The Jetstream UNx Fluid End Upgrade is ideal for replacing a damaged, costly, or unreliable fluid end. It is also a cost-effective solution to increase the available operating pressure or range of pressures for those who have already converted to the UNx. The upgrade delivers all of the benefits of the UNx Fluid End design.

- Three plunger (triplex) design
- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**
- Clamp-style plungers
- Includes hose adapters and one rupture disc holder
- Choose an additional rupture disc holder or a Severe Service Relief Valve as a second safety device
- Pressure gauge and burst discs not included
- Bolt-on installation requires only minutes
- Once upgraded to the UNx design, the unit can be supplemented with additional fluid ends to expand its range of operating pressures.



Fits the following pump models:

Butterworth-Partek — L-450, T-450, TF-450, L-200
Gardner-Denver — TF-450

General Specs

Plungers			Connection Types*		
#	Stroke		Discharge Ports	Top Ports (Accessory)	Supply Port
	in	mm			
3	4.50	114	3/4" NPT Fml	1/2" NPT Fml	2" NPT Fml

* See details on all connection types beginning on page I-2.

Related Items

SEVERE SERVICE RELIEF VALVES – See page G-2
BURST DISCS – See page G-1
PRESSURE GAUGES – See page F-1
PLUNGER PACKAGES – See page B-54
SPARE PARTS PACKAGES – See page B-53
PUMP TOOLS – See page B-55

Fluid End Specs

Part No.	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
	No.	Diameter		150 RPM		200 RPM		300 RPM		400 RPM		500 RPM		hp	kW	Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm			gpm	lpm	psi	bar
51840	#10	.980	24.89	6.6	25	8.8	33	13.2	50	17.6	67	22.1	84	215	160	22.1	84	15,000	1000
51845	#11	1.100	27.94	8.3	32	11.1	42	16.7	63	22.2	84	27.8	105	260	194	26.9	102	15,000	1000
														215	160	27.8	105	12,000	825
51850	#12	1.200	30.48	9.9	38	13.2	50	19.8	75	26.4	100	33.1	125	300	224	31.0	117	15,000	1000
														260	194	33.1	125	12,000	825
														215	160	33.1	125	10,000	700
51855	#13	1.335	33.91	12.3	46	16.4	62	24.6	93	32.7	124	40.9	155	300	224	38.8	147	12,000	825
														260	194	40.3	153	10,000	700
														215	160	40.9	155	8,000	550
51860	#15	1.500	38.10	15.5	59	20.7	78	31.0	117	41.3	156	51.7	196	300	224	46.5	176	10,000	700
														260	194	50.4	191	8,000	550
														215	160	51.3	194	6,500	450
J55775	#16	1.670	42.42	19.2	73	25.6	97	38.4	145	51.2	194	64.0	242	300	224	58.1	220	8,000	550
														260	194	62.0	235	6,500	450
														215	160	64.0	242	5,000	350

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Performance data is based on power end specifications published by the original equipment manufacturer; however, some power ends may differ from those used to determine the values above. Contact a Jetstream Solutions Provider for help with fluid end selection.

PUMPS & FLUID ENDS

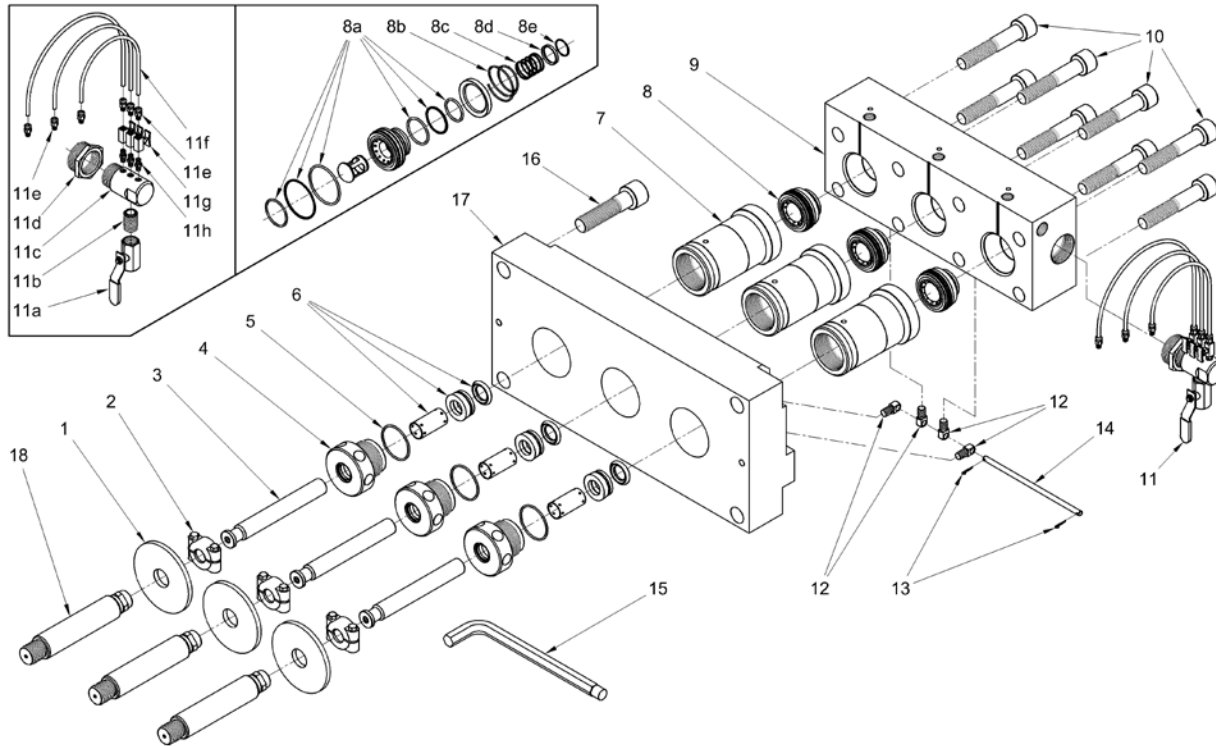
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES

MODEL 4515B

REPLACEMENT PARTS



PUMPS &
FLUID ENDS

NOTE: Parts listed on this page are for current 4515B fluid end models. For first generation fluid end models, which utilize different stuffing boxes, valves, and manifold, see the following page. Models can be most easily distinguished by the part number stamped on the top face of the fluid end manifold. Current models use manifold part number 52866 while first generation fluid ends use manifold part number 51718.

Item	Part No.	Description
1	26487	Deflector
2	51736	Plunger Coupling
3	51721	#10 Plunger
	51722	#11 Plunger
	51723	#12 Plunger
	51724	#13 Plunger
	51726	#15 Plunger
	53314	#16 Plunger
4	51647	#10 Gland Nut
	51651	#11 Gland Nut
	51707	#12 Gland Nut
	51744	#13 Gland Nut
	51746	#15 Gland Nut
	53316	#16 Gland Nut
5	26387	O-Ring (#9 to #15 Gland Nut)
	26930	O-Ring (#16 Gland Nut)
6	50658	#10 Packing Set

Item	Part No.	Description
6	50659	#11 Packing Set
	50660	#12 Packing Set
	50661	#13 Packing Set
	50662	#15 Packing Set
	53321	#16 Packing Set
7	52869	#10 & #11 Stuffing Box
	52871	#12, #13 & #15 Stuffing Box
	J55773	#16 Stuffing Box
8	52870	Uni-Valve
8a	52875	Uni-Valve Seal Kit
8b	52862	Discharge Valve Spring
8c	52861	Suction Valve Spring
8d	52879	Spring Retainer
8e	52878	Retaining Ring
9	52866	Manifold
10	25607	Manifold Bolt
11	51955	Lube Harness

Item	Part No.	Description
11a	27101	Ball Valve
11b	25946	Nipple
11c	53242	Lube Manifold
11d	26802	Reducing Bushing
11e	27732	Tubing Fitting
11f	27740	Tubing (Order in feet)
11g	27475	Needle Valve
11h	26465	Nipple
12	51659	Trunnion
13	26468	Cotter Pin
14	50295	Trunnion Rod
15	50889	Pump Wrench
16	26212	Adapter Plate Bolt
17	51714	Adapter Plate
18	51719	Crosshead Stub

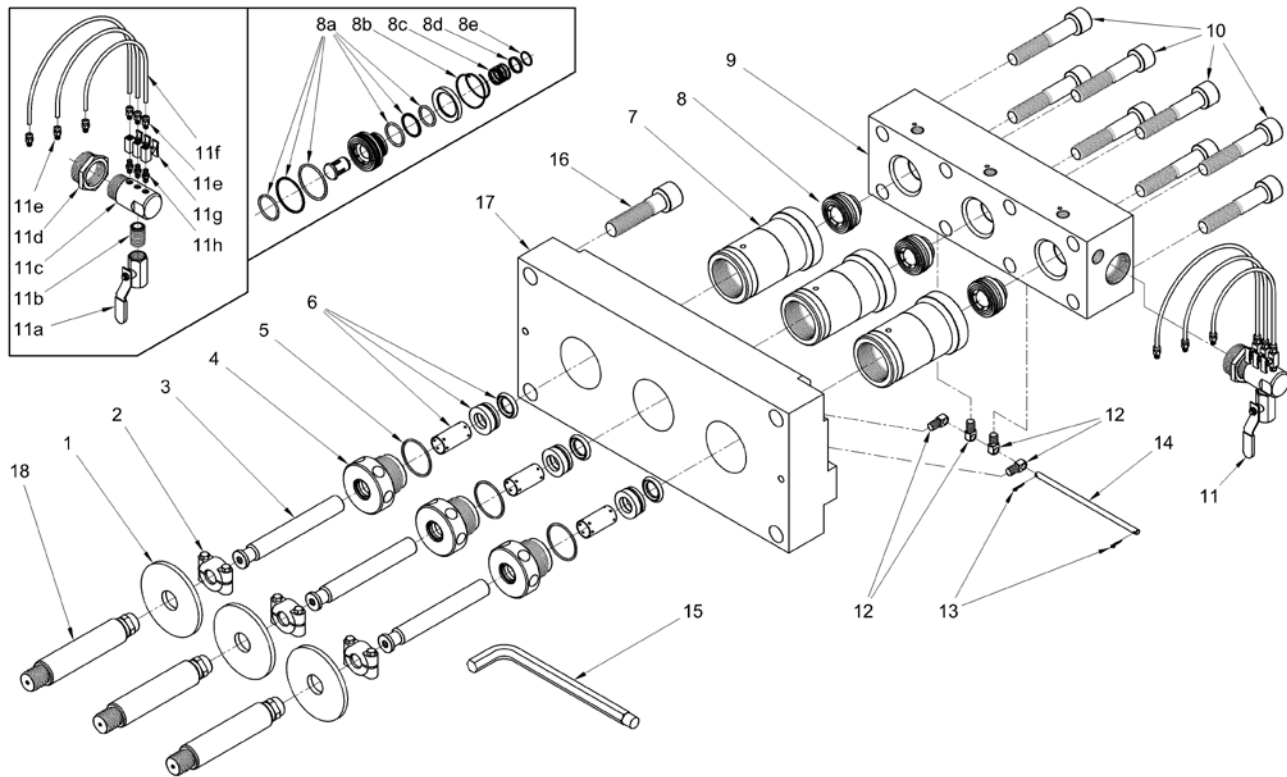
PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES MODEL 4515B (GEN 1) REPLACEMENT PARTS

PUMPS &
FLUID ENDS



NOTE: Parts listed on this page are for first generation 4515B fluid end models no longer sold. These models utilize different stuffing boxes, valves, and manifold than the current design. Models can be most easily distinguished by the part number stamped on the top face of the fluid end manifold. Current models use manifold part number 52866 while first generation fluid ends featured on this page use manifold part number 51718.

Item	Part No.	Description
1	26487	Deflector
2	51736	Plunger Coupling
3	51721	#10 Plunger
	51722	#11 Plunger
	51723	#12 Plunger
	51724	#13 Plunger
	51726	#15 Plunger
4	51647	#10 Gland Nut
	51651	#11 Gland Nut
	51707	#12 Gland Nut
	51744	#13 Gland Nut
	51746	#15 Gland Nut
5	26387	O-Ring
6	50658	#10 Packing Set
	50659	#11 Packing Set

Item	Part No.	Description
6	50660	#12 Packing Set
	50661	#13 Packing Set
	50662	#15 Packing Set
7	51716	#10 & #11 Stuffing Box
	51717	#12, #13 & #15 Stuffing Box
8	50365	Uni-Valve
8a	50370	Uni-Valve Seal Kit
8b	25060	Discharge Valve Spring
8c	25059	Suction Valve Spring
8d	50303	Spring Retainer
8e	25255	Retaining Ring
9	51718	Manifold
10	25607	Manifold Bolt
11	51955	Lube Harness
11a	27101	Ball Valve

Item	Part No.	Description
11b	25946	Nipple
11c	53242	Lube Manifold
11d	26802	Reducing Bushing
11e	27732	Tubing Fitting
11f	27740	Tubing (Order in feet)
11g	27475	Needle Valve
11h	26465	Nipple
12	51659	Trunnion
13	26468	Cotter Pin
14	50295	Trunnion Rod
15	50889	Pump Wrench
16	26212	Adapter Plate Bolt
17	51714	Adapter Plate
18	51719	Crosshead Stub

PUMPS & FLUID ENDS

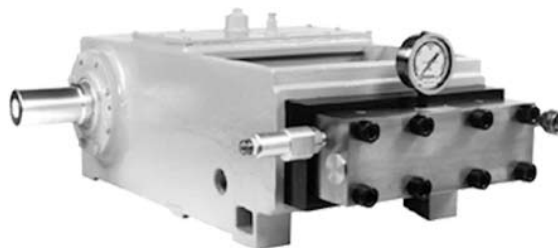
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES MODEL 4015B

The Jetstream UNx Fluid End Upgrade is ideal for replacing a damaged, costly, or unreliable fluid end. It is also a cost-effective solution to increase the available operating pressure or range of pressures for those who have already converted to the UNx. The upgrade delivers all of the benefits of the UNx Fluid End design.

- Three plunger (triplex) design
- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**
- Clamp-style plungers
- Includes hose adapters and one rupture disc holder
- Choose an additional rupture disc holder or a Severe Service Relief Valve as a second safety device
- Pressure gauge and burst discs not included
- Bolt-on installation requires only minutes
- Once upgraded to the UNx design, the unit can be supplemented with additional fluid ends to expand its range of operating pressures.



Fits the following pump models:

Butterworth-Partek — L-77

General Specs

Plungers			Connection Types*		
#	Stroke		Discharge Ports	Top Ports (Accessory)	Supply Port
	in	mm			
3	4.00	102	3/4" NPT Fml	1/2" NPT Fml	2" NPT Fml

* See details on all connection types beginning on page I-2.

Related Items

SEVERE SERVICE RELIEF VALVES – See page G-2

BURST DISCS – See page G-1

PRESSURE GAUGES – See page F-1

PLUNGER PACKAGES – See page B-54

SPARE PARTS PACKAGES – See page B-53

PUMP TOOLS – See page B-55

Fluid End Specs

Part No.	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
	No.	Diameter		150 RPM		200 RPM		300 RPM		400 RPM		500 RPM				Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	hp	kW	gpm	lpm	psi	bar
51950	#9	.900	22.86	5.0	19	6.6	25	9.9	38	13.2	50	16.5	63	160	119	16.5	63	15,000	1000
51865	#10	.980	24.89	5.9	22	7.8	30	11.8	45	15.7	59	19.6	74	160	119	19.6	74	12,500	850
51870	#11	1.100	27.94	7.4	28	9.9	37	14.8	56	19.8	75	24.7	93			24.7	93	10,000	700
51875	#12	1.200	30.48	8.8	33	11.8	44	17.6	67	23.5	89	29.4	111	160	119	29.2	111	8,500	600
51880	#13	1.335	33.91	10.9	41	14.5	55	21.8	83	29.1	110	36.4	138	160	119	36.4	138	6,500	450

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Performance data is based on power end specifications published by the original equipment manufacturer; however, some power ends may differ from those used to determine the values above. Contact a Jetstream Solutions Provider for help with fluid end selection.

PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)

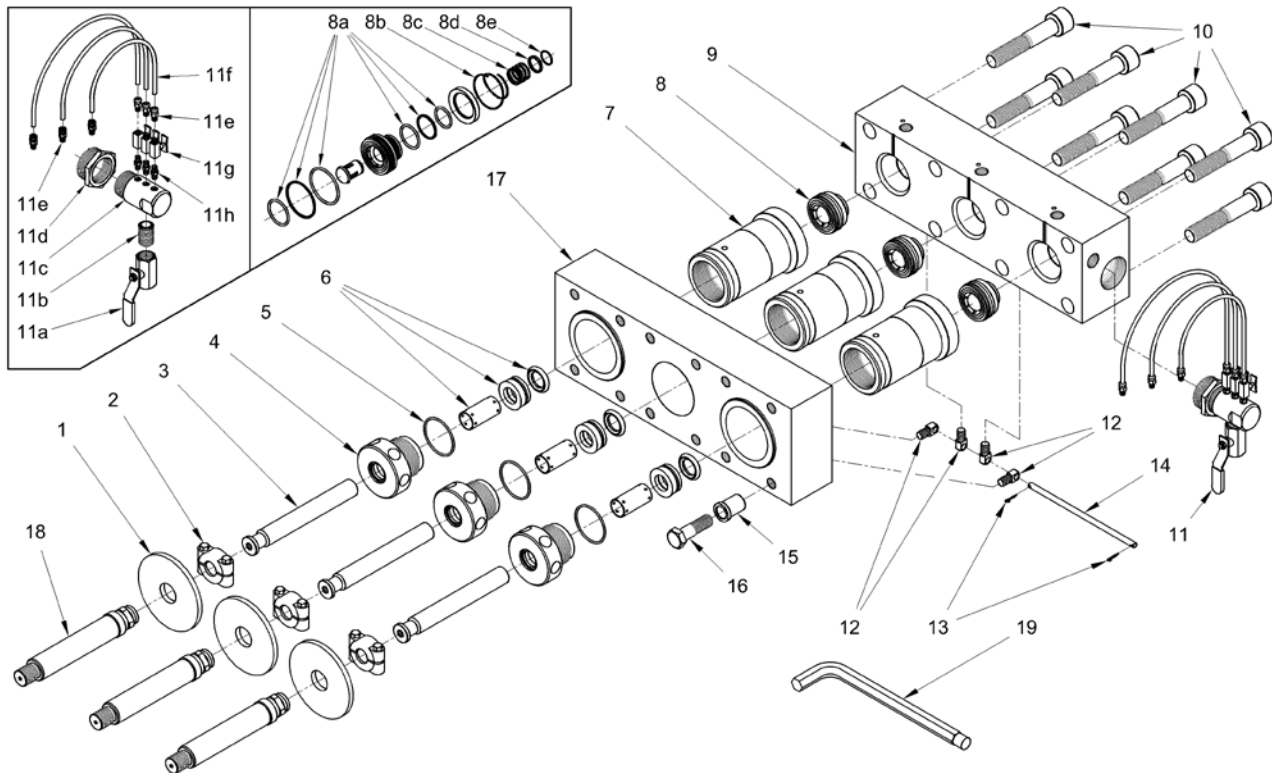


UNx® FLUID END UPGRADES

MODEL 4015B

REPLACEMENT PARTS

PUMPS &
FLUID ENDS



Item	Part No.	Description
1	26487	Deflector
2	51736	Plunger Coupling
3	51808	#9 Plunger
	51721	#10 Plunger
	51722	#11 Plunger
	51723	#12 Plunger
	51724	#13 Plunger
	51809	#9 Gland Nut
4	51647	#10 Gland Nut
	51651	#11 Gland Nut
	51707	#12 Gland Nut
	51744	#13 Gland Nut
5	26387	O-Ring
6	51802	#9 Packing Set
	50658	#10 Packing Set

Item	Part No.	Description
6	50659	#11 Packing Set
	50660	#12 Packing Set
	50661	#13 Packing Set
7	50297	#9, #10 & #11 Stuffing Box
	50299	#12 & #13 Stuffing Box
8	50365	Uni-Valve
8a	50370	Uni-Valve Seal Kit
8b	25060	Discharge Valve Spring
8c	25059	Suction Valve Spring
8d	50303	Spring Retainer
8e	25255	Retaining Ring
9	51288	Manifold
10	25607	Manifold Bolt
11	51955	Lube Harness
11a	27101	Ball Valve

Item	Part No.	Description
11b	25946	Nipple
11c	53242	Lube Manifold
11d	26802	Reducing Bushing
11e	27732	Tubing Fitting
11f	27740	Tubing (Order in feet)
11g	27475	Needle Valve
11h	26465	Nipple
12	51659	Trunnion
13	26468	Cotter Pin
14	50295	Trunnion Rod
15	50115	Adapter Plate Spacer
16	26494	Adapter Plate Bolt
17	51287	Adapter Plate
18	51556	Plunger Adapter
19	50889	Pump Wrench

PUMPS & FLUID ENDS

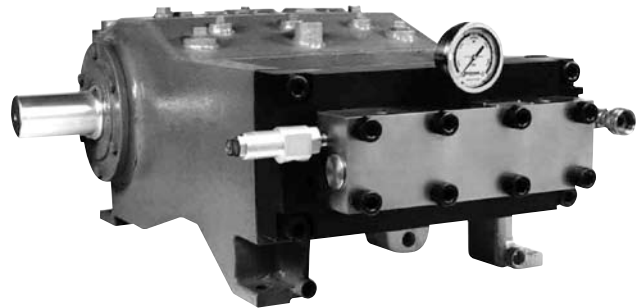
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES MODEL 3715B

The Jetstream UNx Fluid End Upgrade is ideal for replacing a damaged, costly, or unreliable fluid end. It is also a cost-effective solution to increase the available operating pressure or range of pressures for those who have already converted to the UNx. The upgrade delivers all of the benefits of the UNx Fluid End design.

- Three plunger (triplex) design
- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**
- Clamp-style plungers
- Includes hose adapters and one rupture disc holder
- Choose an additional rupture disc holder or a Severe Service Relief Valve as a second safety device
- Pressure gauge and burst discs not included
- Bolt-on installation requires only minutes
- Once upgraded to the UNx design, the unit can be supplemented with additional fluid ends to expand its range of operating pressures.



PUMPS &
FLUID ENDS

Fits the following pump models:

Butterworth-Partek — L-375, T-375, I-375, TF-375, L-130
Gardner-Denver — TF-375

General Specs

Plungers			Connection Types*		
#	Stroke		Discharge Ports	Top Ports (Accessory)	Supply Port
	in	mm			
3	3.75	95	3/4" NPT Fml	1/2" NPT Fml	2" NPT Fml

* See details on all connection types beginning on page I-2.

Related Items

SEVERE SERVICE RELIEF VALVES – See page G-2

BURST DISCS – See page G-1

PRESSURE GAUGES – See page F-1

PLUNGER PACKAGES – See page B-54

SPARE PARTS PACKAGES – See page B-53

PUMP TOOLS – See page B-55

Fluid End Specs

Part No.	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
	No.	Diameter		200 RPM		300 RPM		400 RPM		500 RPM		575 RPM				Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	hp	kW	gpm	lpm	psi	bar
52225	#9	.900	22.86	6.2	23	9.3	35	12.4	47	15.5	59	17.8	67	160	119	15.5	59	15,000	1000
52230	#10	.980	24.89	7.4	28	11.0	42	14.7	56	18.4	70	21.1	80	200	149	20.7	78	15,000	1000
														160	119	18.4	70	12,500	850
52235	#11	1.100	27.94	9.3	35	13.9	53	18.5	70	23.2	88	26.6	101	200	149	25.8	98	12,000	825
														160	119	23.2	88	10,000	700
52240	#12	1.200	30.48	11.0	42	16.5	63	22.0	83	27.6	104	31.7	120	200	149	31.0	117	10,000	700
														160	119	27.6	104	8,500	600
52245	#13	1.335	33.91	13.6	52	20.5	77	27.3	103	34.1	129	39.2	148	200	149	38.8	147	8,000	550
														160	119	34.1	129	7,000	500

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Performance data is based on power end specifications published by the original equipment manufacturer; however, some power ends may differ from those used to determine the values above. Contact a Jetstream Solutions Provider for help with fluid end selection.

PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)

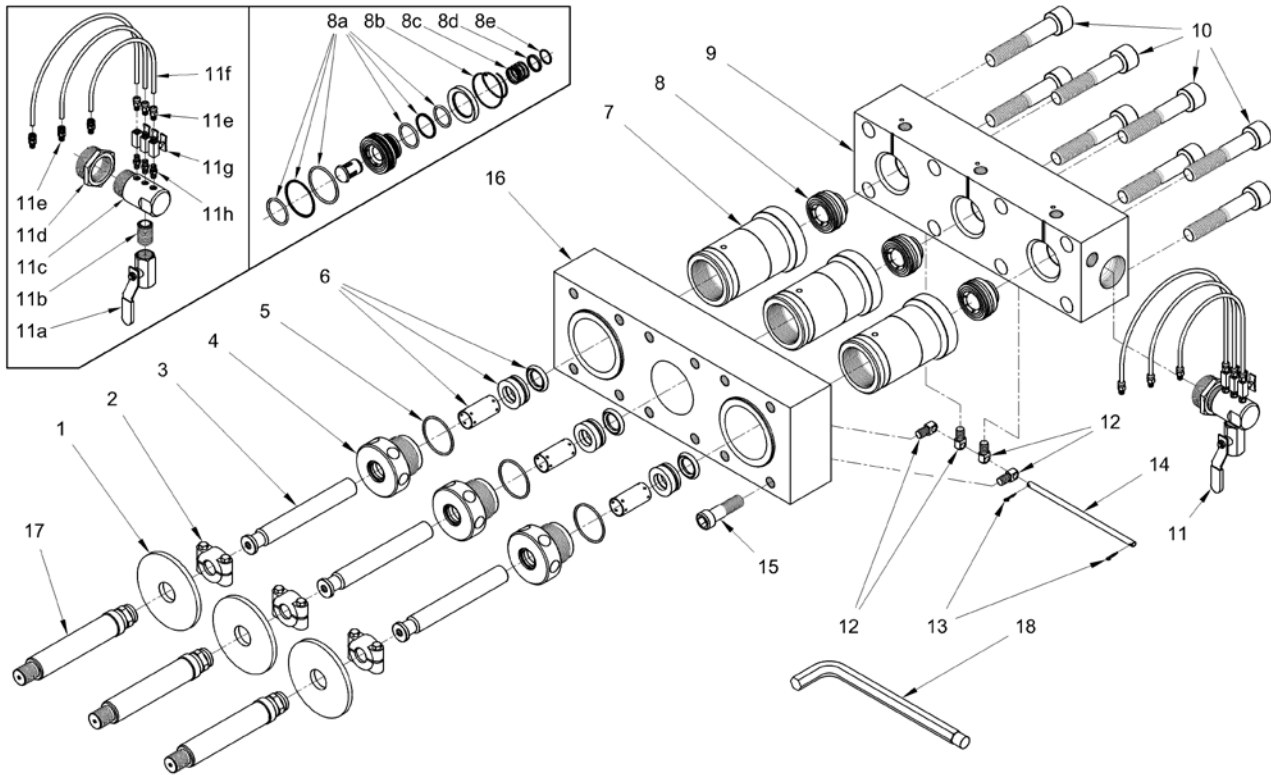


UNx® FLUID END UPGRADES

MODEL 3715B

REPLACEMENT PARTS

PUMPS &
FLUID ENDS



Item	Part No.	Description
1	26487	Deflector
2	51736	Plunger Coupling
3	51808	#9 Plunger
	51721	#10 Plunger
	51722	#11 Plunger
	51723	#12 Plunger
	51724	#13 Plunger
4	51809	#9 Gland Nut
	51647	#10 Gland Nut
	51651	#11 Gland Nut
	51707	#12 Gland Nut
	51744	#13 Gland Nut
5	26387	O-Ring
6	51802	#9 Packing Set
	50658	#10 Packing Set

Item	Part No.	Description
6	50659	#11 Packing Set
	50660	#12 Packing Set
	50661	#13 Packing Set
7	50297	#9, #10 & #11 Stuffing Box
	50299	#12 & #13 Stuffing Box
8	50365	Uni-Valve
8a	50370	Uni-Valve Seal Kit
8b	25060	Discharge Valve Spring
8c	25059	Suction Valve Spring
8d	50303	Spring Retainer
8e	25255	Retaining Ring
9	52194	Manifold
10	25607	Manifold Bolt
11	51955	Lube Harness
11a	27101	Ball Valve

Item	Part No.	Description
11b	25946	Nipple
11c	53242	Lube Manifold
11d	26802	Reducing Bushing
11e	27732	Tubing Fitting
11f	27740	Tubing (Order in feet)
11g	27475	Needle Valve
11h	26465	Nipple
12	51659	Trunnion
13	26468	Cotter Pin
14	50295	Trunnion Rod
15	26220	Adapter Plate Bolt
16	52197	Adapter Plate
17	52196	Plunger Adapter
18	50889	Pump Wrench

PUMPS & FLUID ENDS

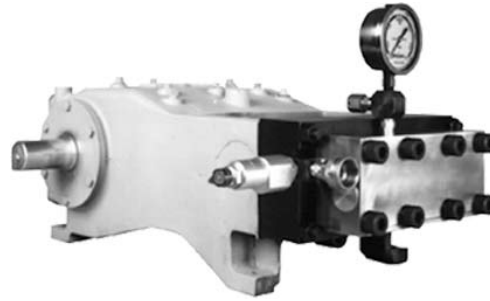
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES MODEL 3015B

The Jetstream UNx Fluid End Upgrade is ideal for replacing a damaged, costly, or unreliable fluid end. It is also a cost-effective solution to increase the available operating pressure or range of pressures for those who have already converted to the UNx. The upgrade delivers all of the benefits of the UNx Fluid End design.

- Three plunger (triplex) design
- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**
- Threaded plungers
- Includes hose adapters and one rupture disc holder
- Choose an additional rupture disc holder or a Severe Service Relief Valve as a second safety device
- Pressure gauge and burst discs not included
- Bolt-on installation requires only minutes
- Once upgraded to the UNx design, the unit can be supplemented with additional fluid ends to expand its range of operating pressures.



Fits the following pump models:

Butterworth-Partek — T-300, L-300, L-74, I-300, PT-33
Gardner-Denver — T-300

General Specs

Plungers			Connection Types*		
#	Stroke		Discharge Ports	Top Ports (Accessory)	Supply Port
	in	mm			
3	3.00	76	1/2" NPT Fml	1/2" NPT Fml	1-1/2" NPT Fml

* See details on all connection types beginning on page I-2.

Related Items

SEVERE SERVICE RELIEF VALVES – See page G-2
BURST DISCS – See page G-1
PRESSURE GAUGES – See page F-1
PLUNGER PACKAGES – See page B-54
SPARE PARTS PACKAGES – See page B-53
PUMP TOOLS – See page B-55

Fluid End Specs

Part No.	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
	No.	Diameter		200 RPM		300 RPM		400 RPM		500 RPM		600 RPM				Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	hp	kW	gpm	lpm	psi	bar
51700	#7	.735	18.67	3.3	13	5.0	19	6.6	25	8.3	31	9.9	37	100	75	9.9	37	15,000	1000
														75	56	7.8	30	15,000	1000
51705	#8	.800	20.32	3.9	15	5.9	22	7.8	30	9.8	37	11.8	45	100	75	11.8	45	12,500	850
														75	56	9.3	35	12,500	850
51710	#9	.900	22.86	5.0	19	7.4	28	9.9	38	12.4	47	14.9	56	100	75	14.9	56	10,000	700
														75	56	11.6	44	10,000	700
51715	#10	1.000	25.40	6.1	23	9.2	35	12.2	46	15.3	58	18.4	70	100	75	18.4	70	8,000	550
														75	56	14.5	55	8,000	550
52290	#11	1.125	28.58	7.7	29	11.6	44	15.5	59	19.4	73	23.2	88	100	75	23.2	88	6,000	400
														75	56	19.4	73	6,000	400

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Performance data is based on power end specifications published by the original equipment manufacturer; however, some power ends may differ from those used to determine the values above. Contact a Jetstream Solutions Provider for help with fluid end selection.

PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)

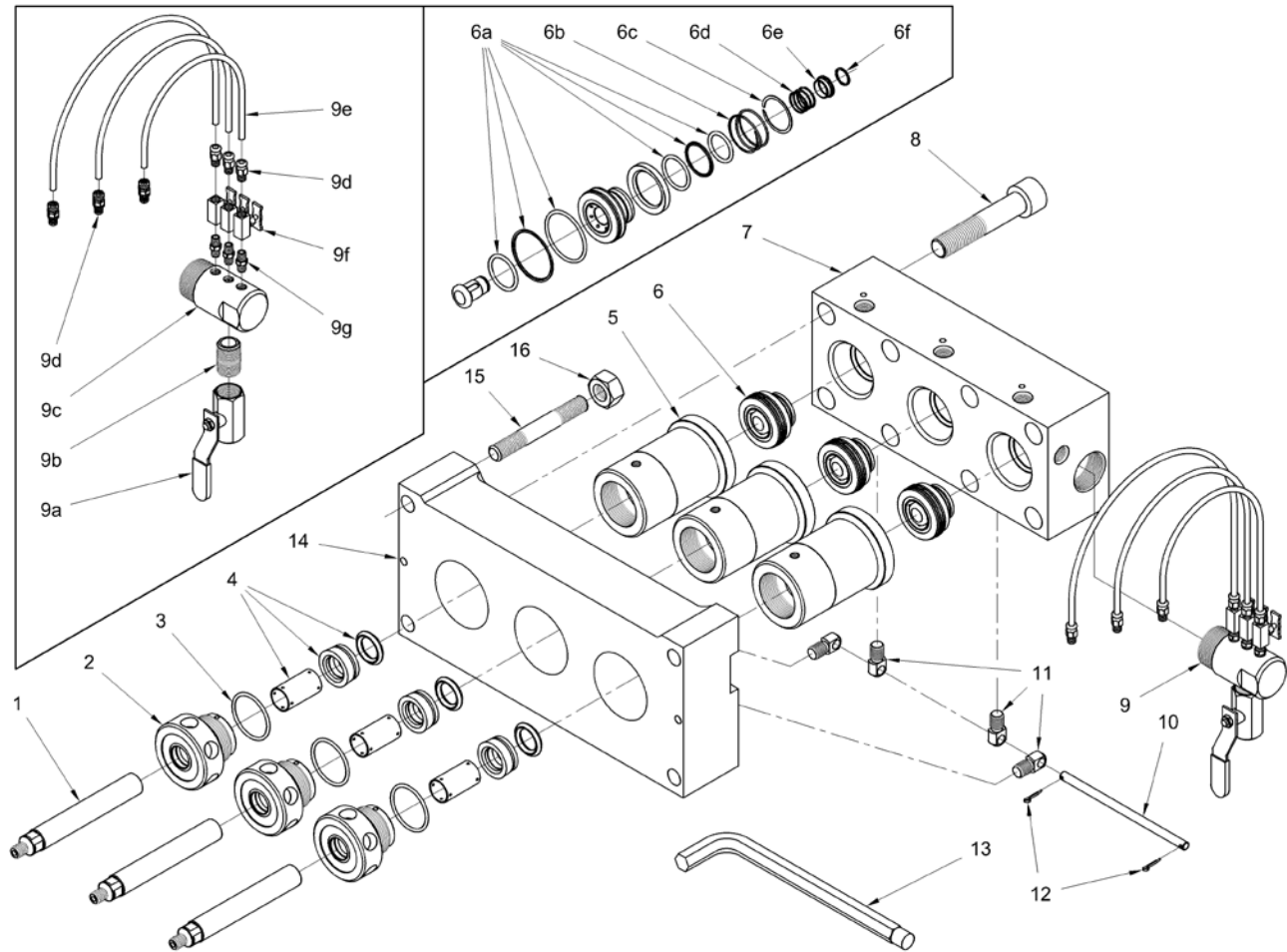


UNx® FLUID END UPGRADES

MODEL 3015B

REPLACEMENT PARTS

PUMPS &
FLUID ENDS



Item	Part No.	Description
1	51690	#7 Plunger
	51696	#8 Plunger
	51667	#9 Plunger
	51694	#10 Plunger
	52983	#11 Plunger
2	51617	#7 Gland Nut
	51619	#8 Gland Nut
	51621	#9 Gland Nut
	51623	#10 Gland Nut
	52231	#11 Gland Nut
3	56416	O-Ring
4	51689	#7 Packing Set
	51691	#8 Packing Set
	51674	#9 Packing Set
	51697	#10 Packing Set

Item	Part No.	Description
4	52233	#11 Packing Set
5	51611	#7 & #8 Stuffing Box
	51671	#9 & #10 Stuffing Box
	52232	#11 Stuffing Box
6	51675	Uni-Valve
6a	50034	Uni-Valve Seal Kit
6b	26476	Discharge Valve Spring
6c	26470	Retaining Ring
6d	26472	Suction Valve Spring
6e	51664	Spring Retainer
6f	26474	Retaining Ring
7	51672	Manifold
8	26462	Manifold Bolt
9	51695	Lube Harness
9a	27101	Ball Valve

Item	Part No.	Description
9b	25946	Nipple
9c	53242	Lube Manifold
9d	27732	Tubing Fitting
9e	27740	Tubing (Order in feet)
9f	27475	Needle Valve
9g	26465	Nipple
10	51666	Trunnion Rod
11	51659	Trunnion
12	26468	Cotter Pin
13	50064	Pump Wrench
14	51673	Adapter Plate
15	26473	Adapter Plate Stud
16	25706	Adapter Plate Nut

PUMPS & FLUID ENDS

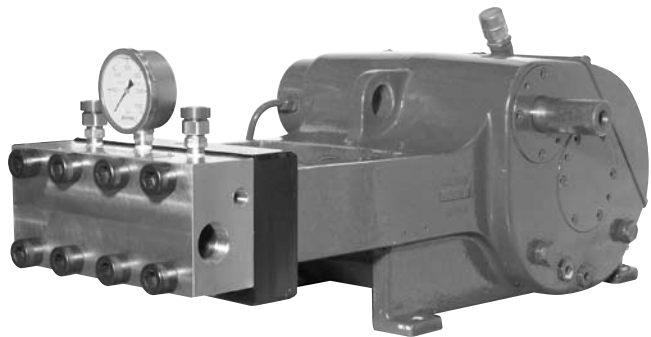
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES MODEL 3715W

The Jetstream UNx Fluid End Upgrade is ideal for replacing a damaged, costly, or unreliable fluid end. It is also a cost-effective solution to increase the available operating pressure or range of pressures for those who have already converted to the UNx. The upgrade delivers all of the benefits of the UNx Fluid End design.

- Three plunger (triplex) design
- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**
- Threaded plungers
- Includes hose adapters and one rupture disc holder
- Choose an additional rupture disc holder or a Severe Service Relief Valve as a second safety device
- Pressure gauge and burst discs not included
- Bolt-on installation requires only minutes
- Once upgraded to the UNx design, the unit can be supplemented with additional fluid ends to expand its range of operating pressures.



PUMPS &
FLUID ENDS

Fits the following pump models:

Woma — 1502, 1503

General Specs

Plungers			Connection Types*		
#	Stroke		Discharge Ports	Top Ports (Accessory)	Supply Port
	in	mm			
3	3.74	95	1/2" NPT Fml	1/2" NPT Fml	1-1/2" NPT Fml

* See details on all connection types beginning on page I-2.

Related Items

SEVERE SERVICE RELIEF VALVES – See page G-2

BURST DISCS – See page G-1

PRESSURE GAUGES – See page F-1

PLUNGER PACKAGES – See page B-54

SPARE PARTS PACKAGES – See page B-53

PUMP TOOLS – See page B-55

Fluid End Specs

Part No.	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
	No.	Diameter		150 RPM		200 RPM		300 RPM		400 RPM		500 RPM				Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	hp	kW	gpm	lpm	psi	bar
54560	#8	.800	20.32	3.7	14	4.9	18	7.3	28	9.8	37	12.2	46	125	93	12.2	46	15,000	1000
54555	#9	.900	22.86	4.6	18	6.2	23	9.3	35	12.4	47	15.5	59	125	93	15.5	59	12,500	850
54550	#10	1.000	25.40	5.7	22	7.6	29	11.4	43	15.3	58	19.1	72	125	93	19.1	72	10,000	700
54545	#11	1.125	28.58	7.2	27	9.7	37	14.5	55	19.3	73	24.2	92	125	93	24.2	92	8,000	550

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Performance data is based on power end specifications published by the original equipment manufacturer; however, some power ends may differ from those used to determine the values above. Contact a Jetstream Solutions Provider for help with fluid end selection.

PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)

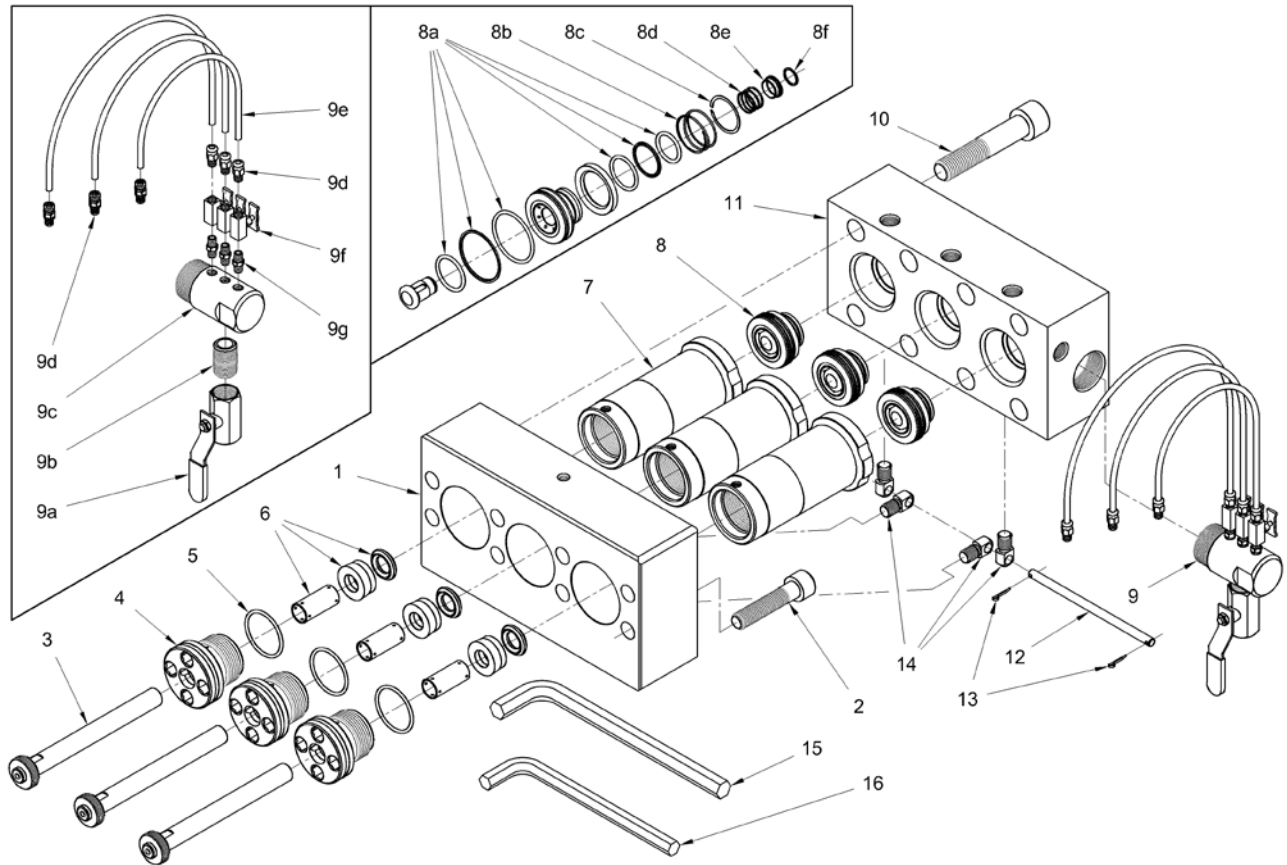


UNx® FLUID END UPGRADES

MODEL 3715W

REPLACEMENT PARTS

PUMPS &
FLUID ENDS



NOTE: Parts listed on this page are for current 3715W fluid end models. For first generation fluid end models, which utilize different stuffing boxes, plungers, manifold, and adapter plate, see the following page. Models can be most easily distinguished by the part number stamped on the top face of the fluid end manifold. Current models use manifold part number 55266 while first generation fluid ends use manifold part number 54424.

Item	Part No.	Description
1	54426	Adapter Plate
2	29748	Adapter Plate Bolt
3	55489	#8 Plunger
	54501	#9 Plunger
	54502	#10 Plunger
	54503	#11 Plunger
4	54428	#8 Gland Nut
	54406	#9 Gland Nut
	54407	#10 Gland Nut
	54408	#11 Gland Nut
5	26416	O-Ring
6	51691	#8 Packing Set
	51674	#9 Packing Set
	51697	#10 Packing Set

Item	Part No.	Description
6	52233	#11 Packing Set
	55491	#8 Stuffing Box
7	54496	#9 & #10 Stuffing Box
	54497	#11 Stuffing Box
8	51675	Uni-Valve
8a	50034	Uni-Valve Seal Kit
8b	26476	Discharge Valve Spring
8c	26470	Retaining Ring
8d	26472	Suction Valve Spring
8e	51664	Spring Retainer
8f	26474	Retaining Ring
9	51695	Lube Harness
9a	27101	Ball Valve
9b	25946	Nipple

Item	Part No.	Description
9c	53242	Lube Manifold
9d	27732	Tube Fitting
9e	27740	Tubing (Order in feet)
9f	27475	Needle Valve
9g	26465	Nipple
10	26462	Manifold Bolt
11	55266	Manifold
12	51666	Trunnion Rod
13	26468	Cotter Pin
14	51659	Trunnion
15	25421	3/4" Pump Wrench
16	26544	5/8" Pump Wrench

PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)

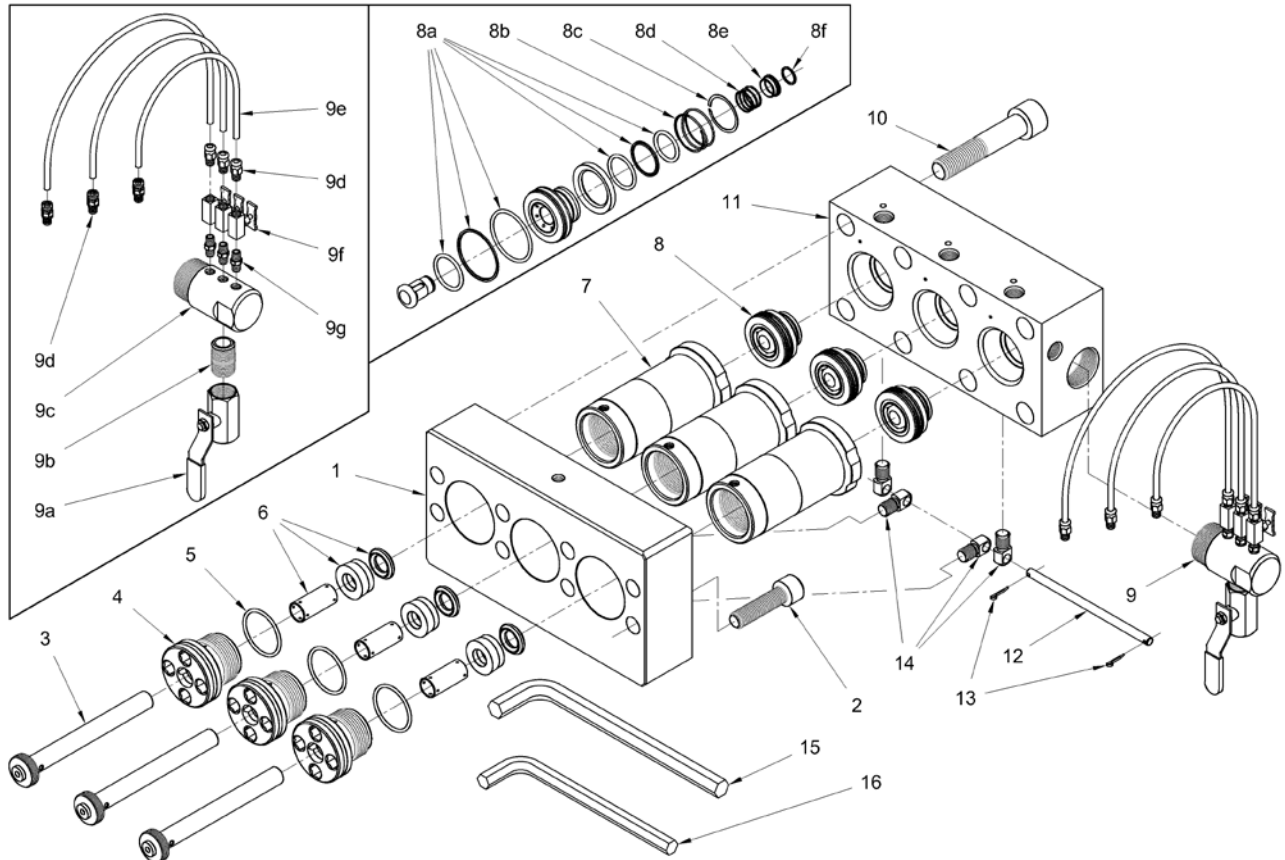


UNx® FLUID END UPGRADES

MODEL 3715W (GEN 1)

REPLACEMENT PARTS

PUMPS &
FLUID ENDS



NOTE: Parts listed on this page are for first generation 3715W fluid end models no longer sold. These models utilize different stuffing boxes, plungers, manifold, and adapter plate than the current design. Models can be most easily distinguished by the part number stamped on the top face of the fluid end manifold. Current models use manifold part number 55266 while first generation fluid ends featured on this page use manifold part number 54424.

Item	Part No.	Description
1	N/A	Adapter Plate
2	28616	Adapter Plate Bolt
3	54429	#8 Plunger
4	54428	#8 Gland Nut
5	26416	O-ring
6	51691	#8 Packing Set
7	54427	#8 Stuffing Box
8	51675	Uni-Valve
8a	50034	Uni-Valve Seal Kit
8b	26476	Discharge Valve Spring

Item	Part No.	Description
8c	26470	Retaining Ring
8d	26472	Suction Valve Spring
8e	51664	Spring Retainer
8f	26474	Retaining Ring
9	51695	Lube Harness
9a	27101	Ball Valve
9b	25946	Nipple
9c	53242	Lube Manifold
9d	27732	Tube Fitting
9e	27740	Tubing (Order in Feet)

Item	Part No.	Description
9f	27475	Needle Valve
9g	26465	Nipple
10	26462	Manifold Bolt
11	N/A	Manifold
12	51666	Trunnion Rod
13	26468	Cotter Pin
14	51659	Trunnion
15	25421	3/4" Pump Wrench
16	26544	5/8" Pump Wrench

PUMPS & FLUID ENDS

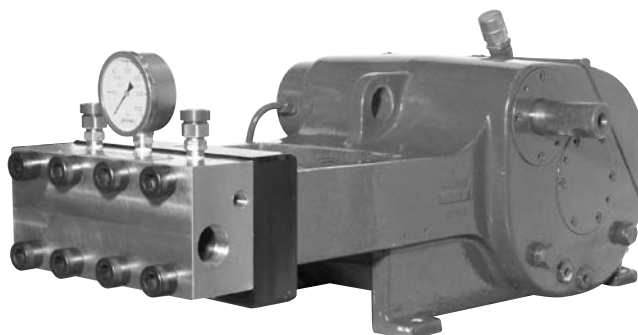
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES MODEL 3715WZ

The Jetstream UNx Fluid End Upgrade is ideal for replacing a damaged, costly, or unreliable fluid end. It is also a cost-effective solution to increase the available operating pressure or range of pressures for those who have already converted to the UNx. The upgrade delivers all of the benefits of the UNx Fluid End design.

- Three plunger (triplex) design
- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**
- Threaded plungers
- Includes hose adapters and one rupture disc holder
- Choose an additional rupture disc holder or a Severe Service Relief Valve as a second safety device
- Pressure gauge and burst discs not included
- Bolt-on installation requires only minutes
- Once upgraded to the UNx design, the unit can be supplemented with additional fluid ends to expand its range of operating pressures.



Fits the following pump models:
Woma — 150-Z

General Specs

Plungers			Connection Types*		
#	Stroke		Discharge Ports	Top Ports (Accessory)	Supply Port
	in	mm			
3	3.74	95	1/2" NPT Fml	1/2" NPT Fml	1-1/2" NPT Fml

* See details on all connection types beginning on page I-2.

Related Items

SEVERE SERVICE RELIEF VALVES – See page G-2
BURST DISCS – See page G-1
PRESSURE GAUGES – See page F-1
PLUNGER PACKAGES – See page B-54
SPARE PARTS PACKAGES – See page B-53
PUMP TOOLS – See page B-55

Fluid End Specs

Part No.	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
	No.	Diameter		150 RPM		200 RPM		300 RPM		400 RPM		500 RPM				Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	hp	kW	gpm	lpm	psi	bar
55270	#8	.800	20.32	3.7	14	4.9	18	7.3	28	9.8	37	12.2	46	125	93	12.2	46	15,000	1000
55275	#9	.900	22.86	4.6	18	6.2	23	9.3	35	12.4	47	15.5	59	125	93	15.5	59	12,500	850
55280	#10	1.000	25.40	5.7	22	7.6	29	11.4	43	15.3	58	19.1	72	125	93	19.1	72	10,000	700
55285	#11	1.125	28.58	7.2	27	9.7	37	14.5	55	19.3	73	24.2	92	125	93	24.2	92	8,000	550

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Performance data is based on power end specifications published by the original equipment manufacturer; however, some power ends may differ from those used to determine the values above. Contact a Jetstream Solutions Provider for help with fluid end selection.

PUMPS & FLUID ENDS

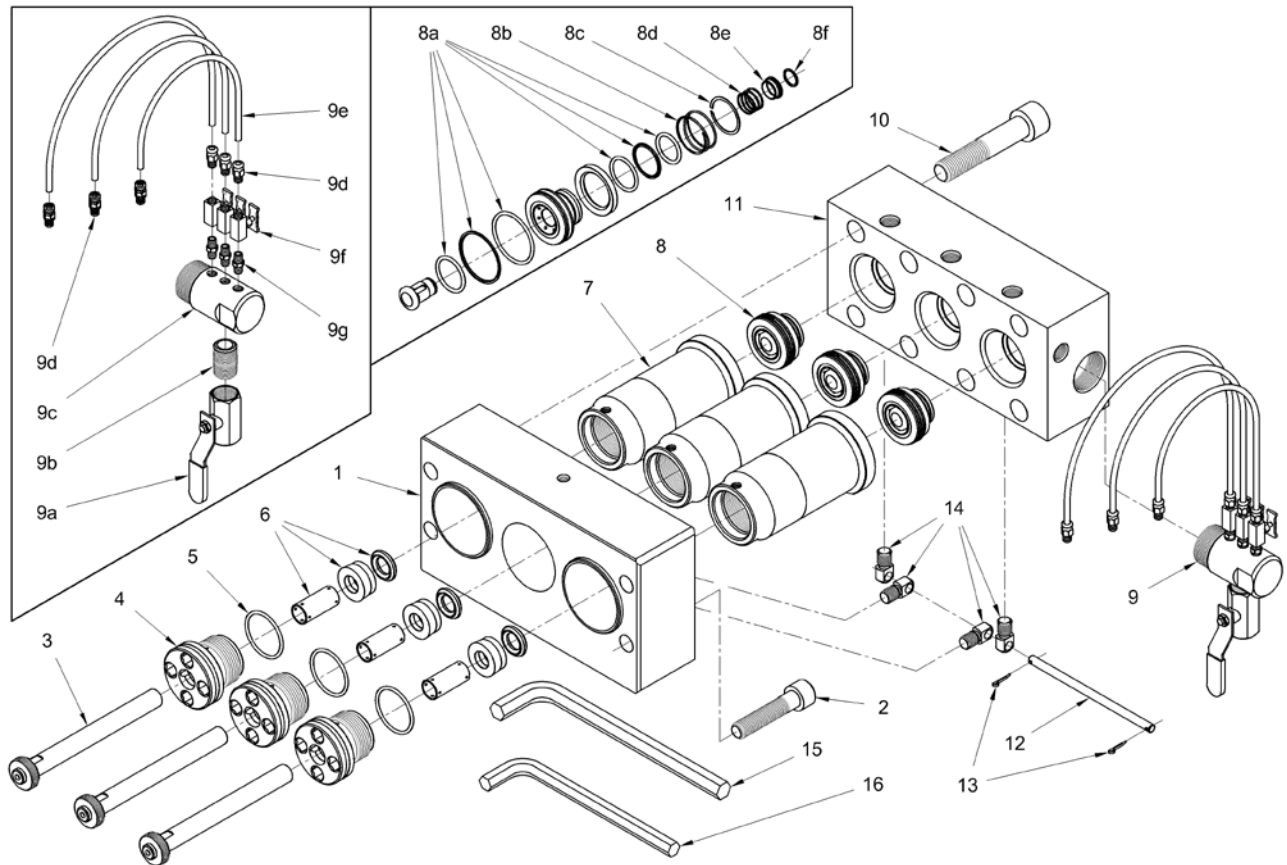
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES

MODEL 3715WZ

REPLACEMENT PARTS



PUMPS &
FLUID ENDS

Item	Part No.	Description
1	55267	Adapter Plate
2	29748	Adapter Plate Bolt
3	55489	#8 Plunger
	54501	#9 Plunger
	54502	#10 Plunger
	54503	#11 Plunger
	54428	#8 Gland Nut
4	54406	#9 Gland Nut
	54407	#10 Gland Nut
	54408	#11 Gland Nut
5	26416	O-Ring
6	51691	#8 Packing Set
	51674	#9 Packing Set
	51697	#10 Packing Set

Item	Part No.	Description
6	52233	#11 Packing Set
7	55268	#8 Stuffing Box
	55269	#9 & #10 Stuffing Box
	55271	#11 Stuffing Box
8	51675	Uni-Valve
8a	50034	Uni-Valve Seal Kit
8b	26476	Discharge Valve Spring
8c	26470	Retaining Ring
8d	26472	Suction Valve Spring
8e	51664	Spring Retainer
8f	26474	Retaining Ring
9	51695	Lube Harness
9a	27101	Ball Valve
9b	25946	Nipple

Item	Part No.	Description
9c	53242	Lube Manifold
9d	27732	Tube Fitting
9e	27740	Tubing (Order in feet)
9f	27475	Needle Valve
9g	26465	Nipple
10	26462	Manifold Bolt
11	55266	Manifold
12	51666	Trunnion Rod
13	26468	Cotter Pin
14	51659	Trunnion
15	25421	3/4" Pump Wrench
16	26544	5/8" Pump Wrench

PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES MODEL 3515Q

The Jetstream UNx Fluid End Upgrade is ideal for replacing a damaged, costly, or unreliable fluid end. It is also a cost-effective solution to increase the available operating pressure or range of pressures for those who have already converted to the UNx. The upgrade delivers all of the benefits of the UNx Fluid End design.

- Five plunger (quintuplex) design
- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**
- Clamp-style plungers
- Includes hose adapters and one rupture disc holder
- Choose an additional rupture disc holder or a Severe Service Relief Valve as a second safety device
- Pressure gauge and burst discs not included
- Bolt-on installation requires only minutes
- Once upgraded to the UNx design, the unit can be supplemented with additional fluid ends to expand its range of operating pressures.



Fits the following pump models:

Tritan — 5127SS, 5127WSS, 5310WSS

Wheatley — HP125 (power end)

General Specs

Plungers			Connection Types*		
#	Stroke		Discharge Ports	Top Ports (Accessory)	Supply Port
	in	mm			
5	3.50	89	1/2" NPT Fml	1/2" NPT Fml	1-1/2" NPT Fml

* See details on all connection types beginning on page I-2.

Related Items

SEVERE SERVICE RELIEF VALVES – See page G-2

BURST DISCS – See page G-1

PRESSURE GAUGES – See page F-1

PLUNGER PACKAGES – See page B-54

PUMP TOOLS – See page B-55

Fluid End Specs

Part No.	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
	No.	Diameter		150 RPM		200 RPM		300 RPM		400 RPM		500 RPM				Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	hp	kW	gpm	lpm	psi	bar
51915	#7	.735	18.67	4.8	18	6.4	24	9.6	37	12.9	49	16.1	61	150	112	15.5	59	15,000	1000
51920	#8	.800	20.32	5.7	22	7.6	29	11.4	43	15.2	58	19.0	72	150	112	18.6	70	12,500	850
51925	#9	.900	22.86	7.2	27	9.6	36	14.5	55	19.3	73	24.1	91	150	112	23.3	88	10,000	700
51930	#10	1.000	25.40	8.9	34	11.9	45	17.9	68	23.8	90	29.8	113	150	112	29.1	110	8,000	550

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Performance data is based on power end specifications published by the original equipment manufacturer; however, some power ends may differ from those used to determine the values above. Contact a Jetstream Solutions Provider for help with fluid end selection.

PUMPS & FLUID ENDS

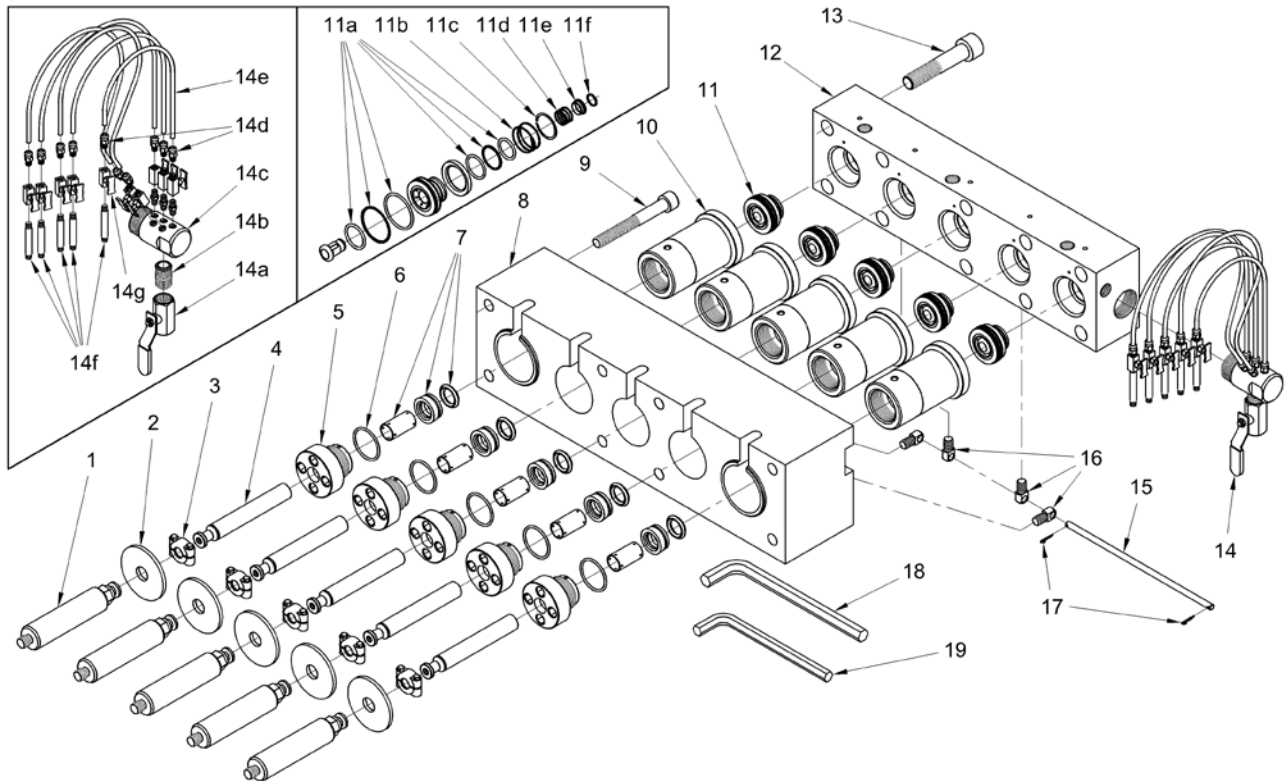
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES

MODEL 3515Q

REPLACEMENT PARTS



Item	Part No.	Description
1	51791	Pony Rod
2	26623	Deflector
3	51737	Plunger Clamp
4	51831	#7 Plunger
	51741	#8 Plunger
	51742	#9 Plunger
	51743	#10 Plunger
5	51796	#7 Gland Nut
	51797	#8 Gland Nut
	51798	#9 Gland Nut
	51799	#10 Gland Nut
6	26416	O-Ring
7	51689	#7 Packing Set
	51691	#8 Packing Set

Item	Part No.	Description
7	51674	#9 Packing Set
	51697	#10 Packing Set
8	51792	Adapter Plate
9	25220	Adapter Plate Bolt
10	51788	#7 & #8 Stuffing Box
	51789	#9 & #10 Stuffing Box
11	51675	Uni-Valve
11a	50034	Uni-Valve Seal Kit
11b	26476	Discharge Valve Spring
11c	26470	Retaining Ring
11d	26472	Suction Valve Spring
11e	51664	Spring Retainer
11f	26474	Retaining Ring
12	51793	Manifold

Item	Part No.	Description
13	26462	Manifold Bolt
14	51795	Lube Harness
14a	27101	Ball Valve
14b	25946	Nipple
14c	53793	Lube Manifold
14d	27732	Tube Fitting
14e	27740	Tubing (Order in feet)
14f	26543	Nipple
14g	27475	Needle Valve
15	51016	Trunnion Rod
16	51659	Trunnion
17	26468	Cotter Pin
18	25421	3/4" Pump Wrench
19	26544	5/8" Pump Wrench

PUMPS & FLUID ENDS

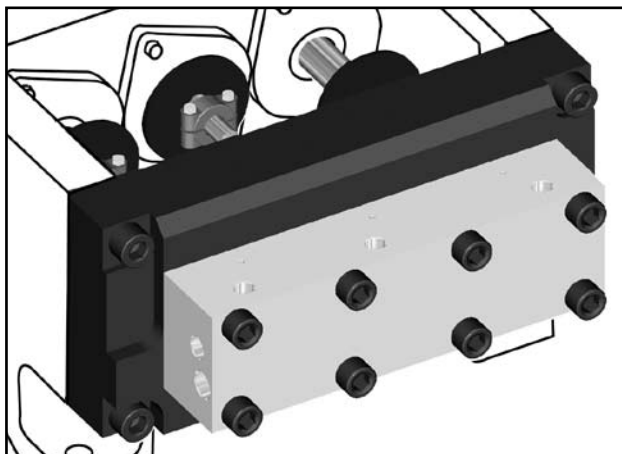
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES MODEL 3115T

The Jetstream UNx Fluid End Upgrade is ideal for replacing a damaged, costly, or unreliable fluid end. It is also a cost-effective solution to increase the available operating pressure or range of pressures for those who have already converted to the UNx. The upgrade delivers all of the benefits of the UNx Fluid End design.

- Three plunger (triplex) design
- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**
- Clamp-style plungers
- Includes hose adapters and one rupture disc holder
- Choose an additional rupture disc holder or a Severe Service Relief Valve as a second safety device
- Pressure gauge and burst discs not included
- Bolt-on installation requires only minutes
- Once upgraded to the UNx design, the unit can be supplemented with additional fluid ends to expand its range of operating pressures.



Fits the following pump models:

Tritan — 3310SS, 3310WSS

Wheatley — P-313, P-323, P-330A

General Specs

Plungers			Connection Types*		
#	Stroke		Discharge Ports	Top Ports (Accessory)	Supply Port
	in	mm			
3	3.12	79	1/2" NPT Fml	1/2" NPT Fml	1-1/2" NPT Fml

* See details on all connection types beginning on page I-2.

Related Items

SEVERE SERVICE RELIEF VALVES – See page G-2

BURST DISCS – See page G-1

PRESSURE GAUGES – See page F-1

PLUNGER PACKAGES – See page B-54

SPARE PARTS PACKAGES – See page B-53

PUMP TOOLS – See page B-55

Fluid End Specs

Part No.	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
	No.	Diameter		150 RPM		200 RPM		300 RPM		400 RPM		500 RPM		hp	kW	Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm			gpm	lpm	psi	bar
52755	#7	.735	18.67	2.6	10	3.4	13	5.2	20	6.9	26	8.6	33	90	67	8.6	33	15,000	1000
52760	#8	.800	20.32	3.1	12	4.1	15	6.1	23	8.2	31	10.2	39	90	67	10.2	39	12,500	850
52765	#9	.900	22.86	3.9	15	5.2	20	7.7	29	10.3	39	12.9	49	90	67	12.9	49	10,000	700
52770	#10	1.000	25.40	4.8	18	6.4	24	9.6	36	12.7	48	15.9	60	90	67	15.9	60	8,000	550

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Performance data is based on power end specifications published by the original equipment manufacturer; however, some power ends may differ from those used to determine the values above. Contact a Jetstream Solutions Provider for help with fluid end selection.

PUMPS & FLUID ENDS

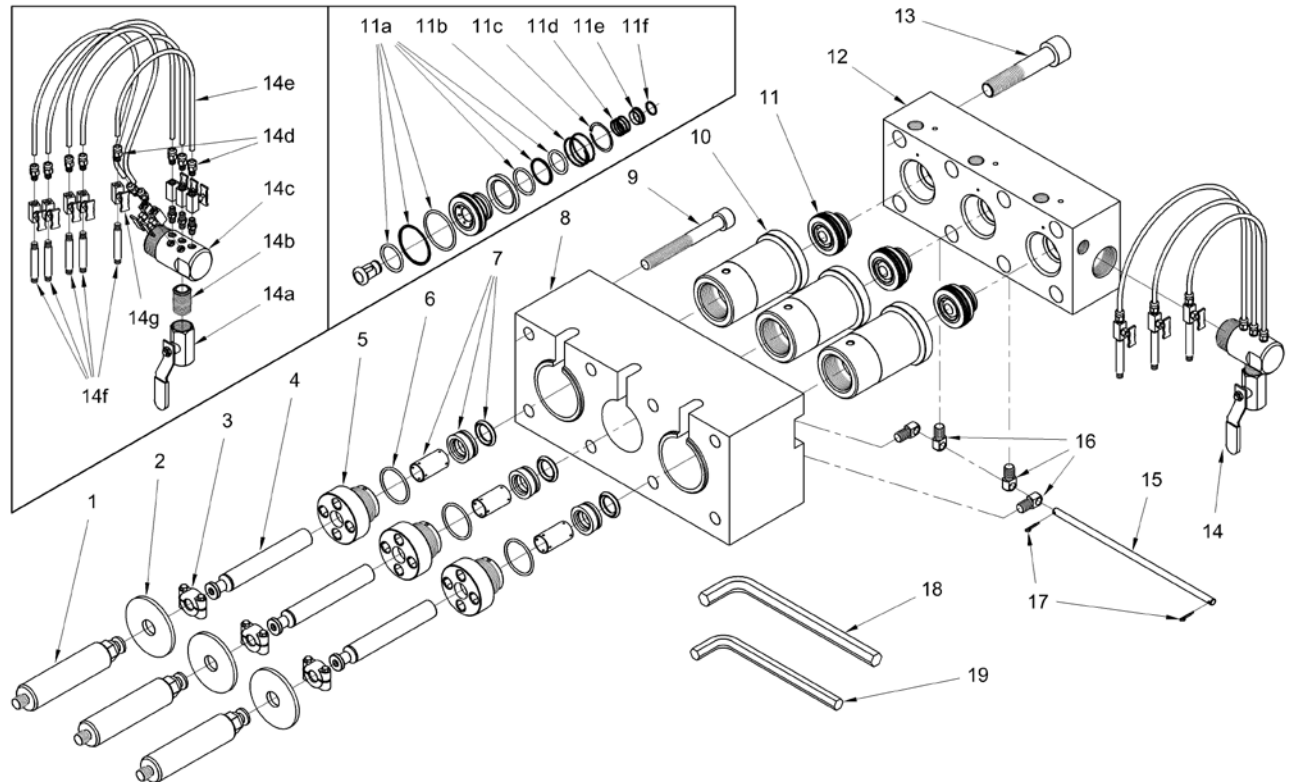
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES

MODEL 3115T

REPLACEMENT PARTS



PUMPS &
FLUID ENDS

Item	Part No.	Description
1	51791	Pony Rod
2	26623	Deflector
3	51737	Plunger Clamp
4	51831	#7 Plunger
	51741	#8 Plunger
	51742	#9 Plunger
	51743	#10 Plunger
5	51796	#7 Gland Nut
	51797	#8 Gland Nut
	51798	#9 Gland Nut
	51799	#10 Gland Nut
6	26416	O-Ring
7	51689	#7 Packing Set
	51691	#8 Packing Set

Item	Part No.	Description
7	51674	#9 Packing Set
	51697	#10 Packing Set
8	52701	Adapter Plate
9	25220	Adapter Plate Bolt
10	51788	#7 & #8 Stuffing Box
	51789	#9 & #10 Stuffing Box
11	51675	Uni-Valve
11a	50034	Uni-Valve Seal Kit
11b	26476	Discharge Valve Spring
11c	26470	Retaining Ring
11d	26472	Suction Valve Spring
11e	51664	Spring Retainer
11f	26474	Retaining Ring
12	52702	Manifold

Item	Part No.	Description
13	26462	Manifold Bolt
14	52785	Lube Harness
14a	27101	Ball Valve
14b	25946	Nipple
14c	53242	Lube Manifold
14d	27732	Tube Fitting
14e	27740	Tubing (Order in feet)
14f	26543	Nipple
14g	27475	Needle Valve
15	51666	Trunnion Rod
16	51659	Trunnion
17	26468	Cotter Pin
18	25421	3/4" Pump Wrench
19	26544	5/8" Pump Wrench

PUMPS & FLUID ENDS

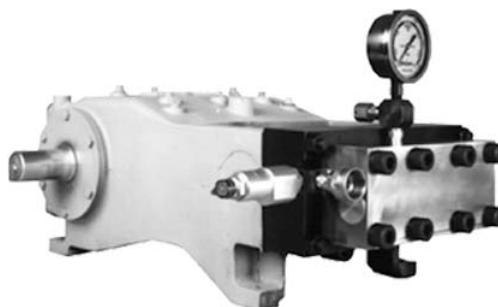
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES MODEL 3015W

The Jetstream UNx Fluid End Upgrade is ideal for replacing a damaged, costly, or unreliable fluid end. It is also a cost-effective solution to increase the available operating pressure or range of pressures for those who have already converted to the UNx. The upgrade delivers all of the benefits of the UNx Fluid End design.

- Three plunger (triplex) design
- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**
- Threaded plungers
- Includes hose adapters and one rupture disc holder
- Choose an additional rupture disc holder or a Severe Service Relief Valve as a second safety device
- Pressure gauge and burst discs not included
- Bolt-on installation requires only minutes
- Once upgraded to the UNx design, the unit can be supplemented with additional fluid ends to expand its range of operating pressures.



Fits the following pump models:
American Aero/Weatherford — FE85

General Specs

Plungers			Connection Types*		
#	Stroke		Discharge Ports	Top Ports (Accessory)	Supply Port
	in	mm			
3	3.00	76	1/2" NPT Fml	1/2" NPT Fml	1-1/2" NPT Fml

* See details on all connection types beginning on page I-2.

Related Items

SEVERE SERVICE RELIEF VALVES – See page G-2
BURST DISCS – See page G-1
PRESSURE GAUGES – See page F-1
PLUNGER PACKAGES – See page B-54
PUMP TOOLS – See page B-55

Fluid End Specs

Part No.	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
	No.	Diameter		200 RPM		300 RPM		400 RPM		500 RPM		550 RPM				Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	hp	kW	gpm	lpm	psi	bar
51740	#7	.735	18.67	3.3	13	5.0	19	6.6	25	8.3	31	9.1	34	90	67	9.1	34	15,000	1000
51745	#8	.800	20.32	3.9	15	5.9	22	7.8	30	9.8	37	10.8	41	90	67	10.8	41	12,500	850
51750	#9	.900	22.86	5.0	19	7.4	28	9.9	38	12.4	47	13.6	51	90	67	13.6	51	10,000	700
51755	#10	1.000	25.40	6.1	23	9.2	35	12.2	46	15.3	58	16.8	64	90	67	16.8	64	8,000	550
52280	#11	1.125	28.58	7.7	29	11.6	44	15.5	59	19.4	73	21.3	81	90	67	21.3	81	6,000	400

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Performance data is based on power end specifications published by the original equipment manufacturer; however, some power ends may differ from those used to determine the values above. Contact a Jetstream Solutions Provider for help with fluid end selection.

PUMPS & FLUID ENDS

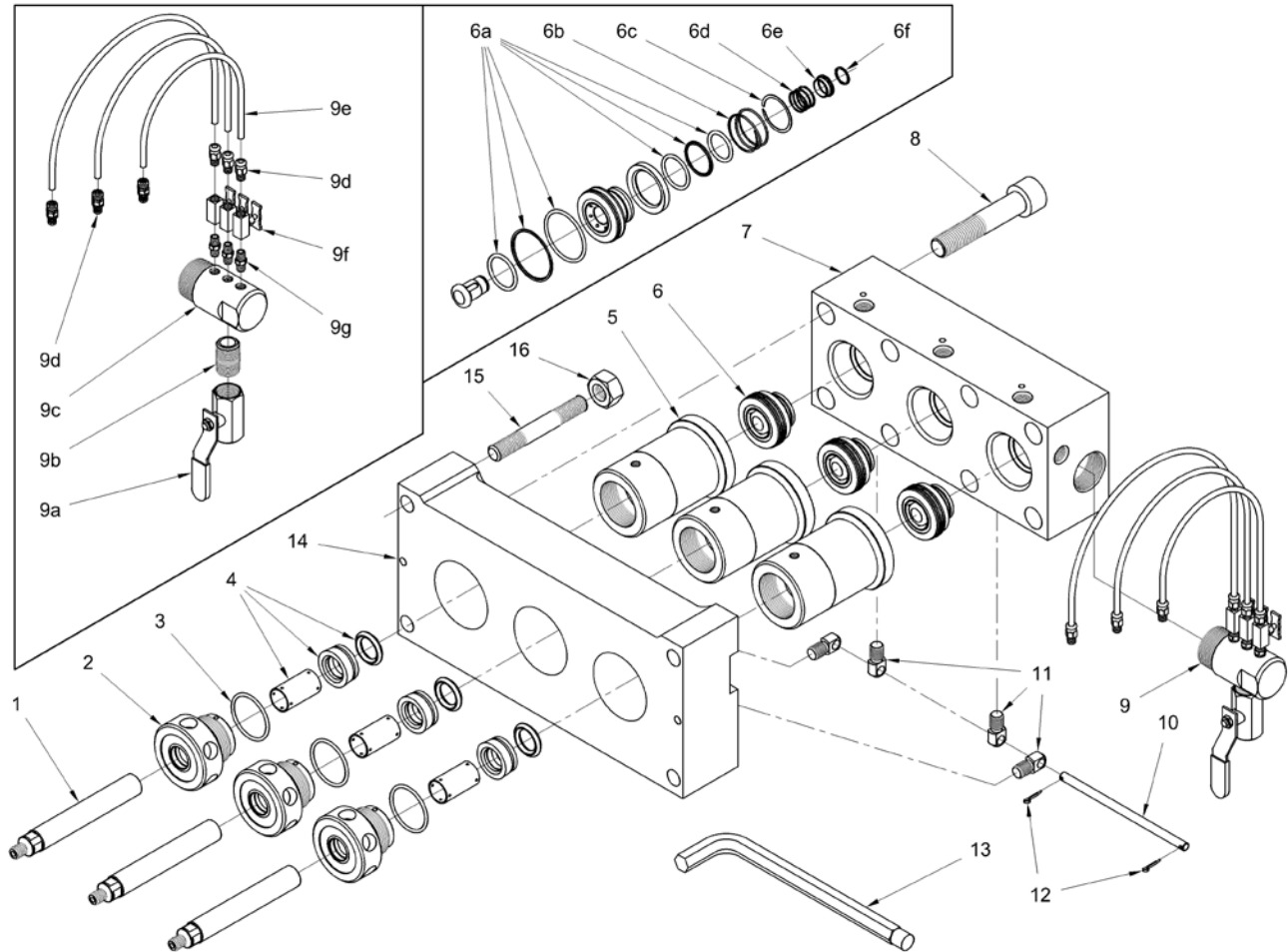
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES

MODEL 3015W

REPLACEMENT PARTS



PUMPS &
FLUID ENDS

Item	Part No.	Description
1	51690	#7 Plunger
	51696	#8 Plunger
	51667	#9 Plunger
	51694	#10 Plunger
	52983	#11 Plunger
2	51617	#7 Gland Nut
	51619	#8 Gland Nut
	51621	#9 Gland Nut
	51623	#10 Gland Nut
	52231	#11 Gland Nut
3	26416	O-Ring
4	51689	#7 Packing Set
	51691	#8 Packing Set
	51674	#9 Packing Set
	51697	#10 Packing Set

Item	Part No.	Description
4	52233	#11 Packing Set
5	51611	#7 & #8 Stuffing Box
	51671	#9 & #10 Stuffing Box
6	52232	#11 Stuffing Box
	51675	Uni-Valve
6a	50034	Uni-Valve Seal Kit
6b	26476	Discharge Valve Spring
6c	26470	Retaining Ring
6d	26472	Suction Valve Spring
6e	51664	Spring Retainer
6f	26474	Retaining Ring
7	51672	Manifold
8	26462	Manifold Bolt
9	51695	Lube Harness
9a	27101	Ball Valve

Item	Part No.	Description
9b	25946	Nipple
9c	53242	Lube Manifold
9d	27732	Tubing Fitting
9e	27740	Tubing (Order in feet)
9f	27475	Needle Valve
9g	26465	Nipple
10	51666	Trunnion Rod
11	51659	Trunnion
12	26468	Cotter Pin
13	50064	Pump Wrench
14	51656	Adapter Plate
15	26473	Adapter Plate Stud
16	25706	Adapter Plate Nut

PUMPS & FLUID ENDS

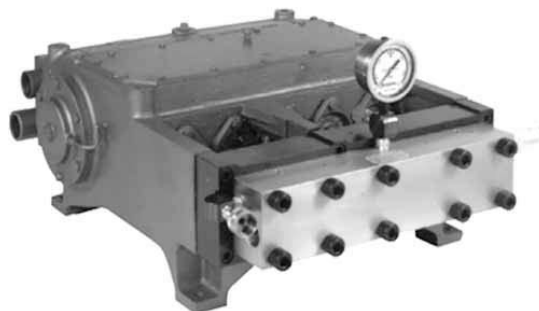
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES MODEL 3015Q

The Jetstream UNx Fluid End Upgrade is ideal for replacing a damaged, costly, or unreliable fluid end. It is also a cost-effective solution to increase the available operating pressure or range of pressures for those who have already converted to the UNx. The upgrade delivers all of the benefits of the UNx Fluid End design.

- Five plunger (quintuplex) design
- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**
- Threaded plungers
- Includes hose adapters and one rupture disc holder
- Choose an additional rupture disc holder or a Severe Service Relief Valve as a second safety device
- Pressure gauge and burst discs not included
- Bolt-on installation requires only minutes
- Once upgraded to the UNx design, the unit can be supplemented with additional fluid ends to expand its range of operating pressures.



Fits the following pump models:

American Aero/Weatherford — FE145

NLB — 10125

Union — QD100 (power end)

General Specs

Plungers			Connection Types*		
#	Stroke		Discharge Ports	Top Ports (Accessory)	Supply Port
	in	mm			
5	3.00	76	1/2" NPT Fml	1/2" NPT Fml	1-1/2" NPT Fml

* See details on all connection types beginning on page I-2.

Related Items

SEVERE SERVICE RELIEF VALVES – See page G-2

BURST DISCS – See page G-1

PRESSURE GAUGES – See page F-1

PLUNGER PACKAGES – See page B-54

SPARE PARTS PACKAGES – See page B-53

PUMP TOOLS – See page B-55

Fluid End Specs

Part No.	Plunger Size			Flow at Specified Pump Speeds**										Power Input		Max. Flow / Pressure			
	No.	Diameter		200 RPM		300 RPM		400 RPM		500 RPM		550 RPM				Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	gpm	lpm	hp	kW	gpm	lpm	psi	bar
51820	#7	.735	18.67	5.5	21	8.3	31	11.0	42	13.8	52	15.2	58	150	112	15.2	58	15,000	1000
51825	#8	.800	20.32	6.5	25	9.8	37	13.1	49	16.3	62	18.0	68	150	112	18.0	68	12,500	850
51830	#9	.900	22.86	8.3	31	12.4	47	16.5	63	20.7	78	22.7	86	150	112	22.7	86	10,000	700
51835	#10	1.000	25.40	10.2	39	15.3	58	20.4	77	25.5	97	28.0	106	150	112	28.0	106	8,000	550
52285	#11	1.125	28.58	12.9	49	19.4	73	25.8	98	32.3	122	35.5	134	150	112	35.5	134	6,500	450

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Performance data is based on power end specifications published by the original equipment manufacturer; however, some power ends may differ from those used to determine the values above. Contact a Jetstream Solutions Provider for help with fluid end selection.

PUMPS & FLUID ENDS

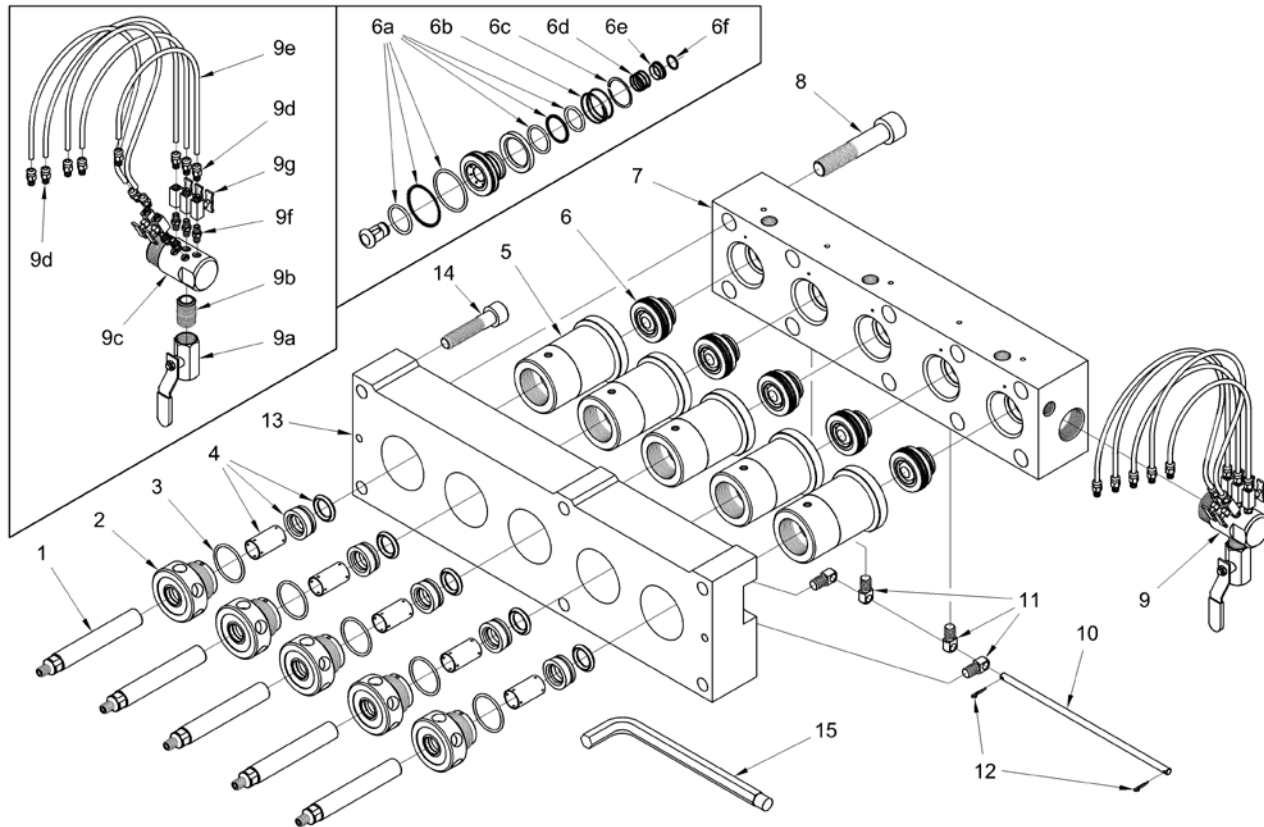
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES

MODEL 3015Q

REPLACEMENT PARTS



Item	Part No.	Description
1	51690	#7 Plunger
	51696	#8 Plunger
	51667	#9 Plunger
	51694	#10 Plunger
	52983	#11 Plunger
2	51617	#7 Gland Nut
	51619	#8 Gland Nut
	51621	#9 Gland Nut
	51623	#10 Gland Nut
	52231	#11 Gland Nut
3	26416	O-Ring
4	51689	#7 Packing Set
	51691	#8 Packing Set
	51674	#9 Packing Set

Item	Part No.	Description
4	51697	#10 Packing Set
	52233	#11 Packing Set
5	51611	#7 & #8 Stuffing Box
	51671	#9 & #10 Stuffing Box
6	52232	#11 Stuffing Box
	51675	Uni-Valve
6a	50034	Uni-Valve Seal Kit
6b	26476	Discharge Valve Spring
6c	26470	Retaining Ring
6d	26472	Suction Valve Spring
6e	51664	Spring Retainer
6f	26474	Retaining Ring
7	50887	Manifold
8	26462	Manifold Bolt

Item	Part No.	Description
9	51490	Lube Harness
9a	27101	Ball Valve
9b	25946	Nipple
9c	53793	Lube Manifold
9d	27732	Tubing Fitting
9e	27740	Tubing (Order in feet)
9f	26465	Nipple
9g	27475	Needle Valve
10	51016	Trunnion Rod
11	51659	Trunnion
12	26468	Cotter Pin
13	50897	Adapter Plate
14	25427	Adapter Plate Bolt
15	50064	Pump Wrench

PUMPS & FLUID ENDS

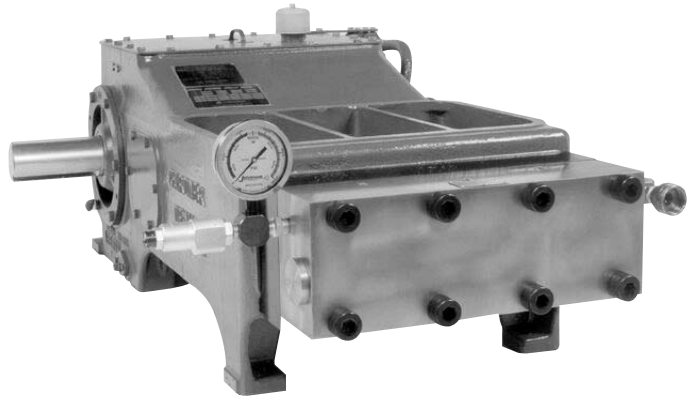
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES MODEL 5015G

The Jetstream UNx Fluid End Upgrade is ideal for replacing a damaged, costly, or unreliable fluid end. It is also a cost-effective solution to increase the available operating pressure or range of pressures for those who have already converted to the UNx. The upgrade delivers all of the benefits of the UNx Fluid End design.

- Three plunger (triplex) design
- Superior performance
- Greater flexibility in the field
- Reduced downtime and maintenance
- **See UNx Features and Benefits on page B-1**
- Clamp-style plungers
- Includes hose adapters and one rupture disc holder
- Choose an additional rupture disc holder or a Severe Service Relief Valve as a second safety device
- Pressure gauge and burst discs not included
- Bolt-on installation requires only minutes



Fits the following pump models:

Gardner-Denver — PE-5, P172

General Specs

Plungers			Connection Types*		
#	Stroke		Discharge Ports	Top Ports (Accessory)	Supply Port
	in	mm			
3	5.00	127	3/4" NPT Fml	1/2" NPT Fml	2-1/2" NPT Fml

* See details on all connection types beginning on page I-2.

Related Items

SEVERE SERVICE RELIEF VALVES – See page G-2

BURST DISCS – See page G-1

PRESSURE GAUGES – See page F-1

PLUNGER PACKAGES – See page B-54

PUMP TOOLS – See page B-55

Fluid End Specs

Part No.	Plunger Size			Flow at Specified Pump Speeds**						Power Input		Max. Flow / Pressure			
	No.	Diameter		100 RPM		150 RPM		200 RPM				Flow**		Pressure	
		in	mm	gpm	lpm	gpm	lpm	gpm	lpm	hp	kW	gpm	lpm	psi	bar
52170	#15	1.500	38.10	11.5	44	17.2	65	23.0	87	225	168	23.0	87	15,000	1000
52185	#17	1.750	44.45	15.6	59	23.4	89	31.3	118	200	149	31.0	117	10,000	700

** Displacement (flow) values represented refer to "theoretical" flow, neglecting inefficiency resulting from compressibility of water and expansion of pressure-bearing components. Performance data is based on power end specifications published by the original equipment manufacturer; however, some power ends may differ from those used to determine the values above. Contact a Jetstream Solutions Provider for help with fluid end selection.

PUMPS & FLUID ENDS

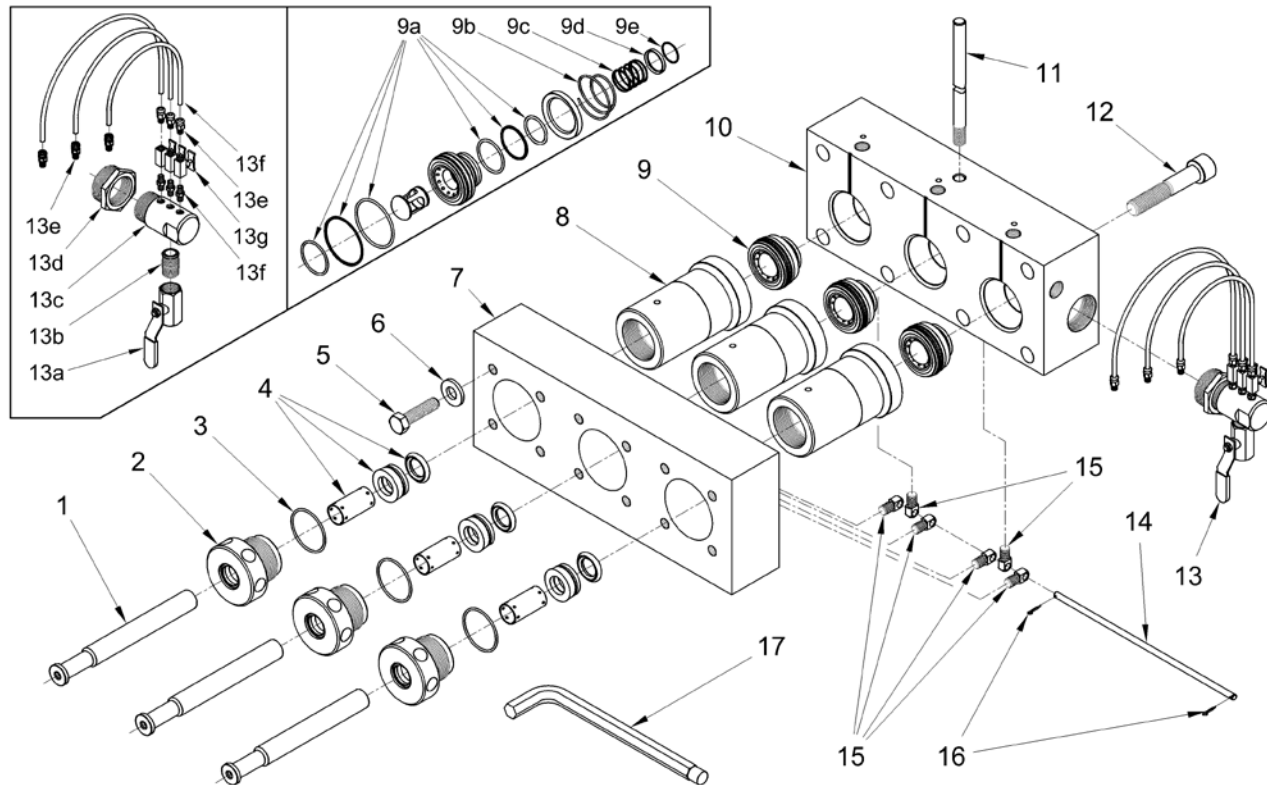
UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES

MODEL 5015G

REPLACEMENT PARTS



PUMPS &
FLUID ENDS

Item	Part No.	Description
1	52092	#15 Plunger
	50378	#17 Plunger
2	52121	#15 Gland Nut
	52122	#17 Gland Nut
3	26734	O-ring
4	52111	#15 Packing Set
	52112	#17 Packing Set
5	26836	Adapter Plate Bolt
6	52104	Washer
7	52098	Adapter Plate
8	52099	Stuffing Box

Item	Part No.	Description
9	52180	Uni-Valve
9a	52118	Uni-Valve Seal Kit
9b	26737	Discharge Valve Spring
9c	26735	Suction Valve Spring
9d	52102	Spring Retainer
9e	26733	Retaining Ring
10	52097	Manifold
11	52114	Lifting Rod
12	26732	Manifold Bolt
13	54895	Lube Harness
13a	27101	Ball Valve

Item	Part No.	Description
13b	25946	Nipple
13c	53242	Lube Manifold
13d	27729	Bushing
13e	27732	Tube Fitting
13f	27740	Tubing (Order in feet)
13g	27475	Needle Valve
13h	26465	Nipple
14	52117	Trunnion Rod
15	51659	Trunnion
16	26468	Cotter Pin
17	50889	Pump Wrench

PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END SPARE PARTS PACKAGES

A must-have for field repairs, these packages include all major fluid end replacement packaged together for easy transport and storage.

- Available for any model UNx fluid end*
- Packaged in a top-of-the-line, waterproof Pelican® case with tough custom foam inlay

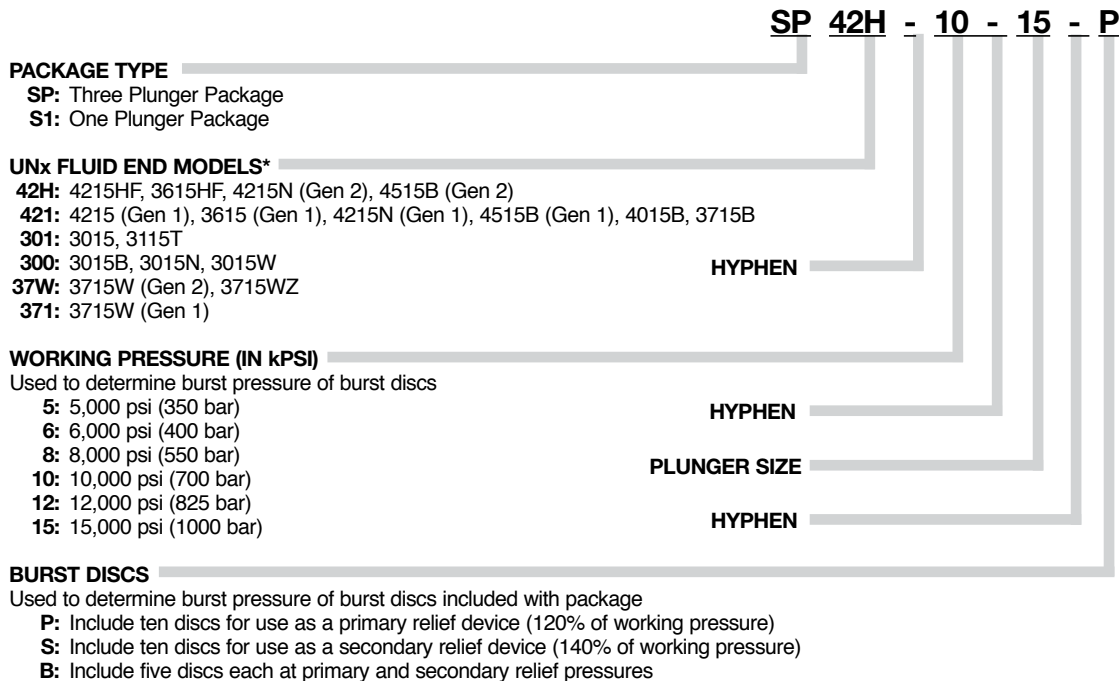
Package Contents

- 1 or 3 plungers
- 3 Uni-Valves
- 3 Packing Sets
- 3 Uni-Valve Seal Kits
- 10 burst discs (five each at primary and secondary relief pressures, or ten at the same relief pressure if only one rupture disc holder is used)
- Locking waterproof case and keys



Ordering Parts Packages

Use the part numbering system below and the information on this page to order parts packages:



* Contact a Jetstream Solutions Provider for models not shown on this page.

PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)



UNx® FLUID END UPGRADES PLUNGER PACKAGES

Packages include only the items needed to convert an existing UNx pump to another pump size

- Available for any model UNx fluid end
- Quick and cost-effective conversions for jobs that require higher flow at lower pressure or higher pressure at lower flow
- Burst discs for new working pressure not included. See page G-1 for ordering information.

Package Contents

- 3 of each for triplex
- 5 of each for quintuplex
- Plungers
- Gland nuts
- Packing Sets
- Stuffing boxes (when needed)



PUMPS &
FLUID ENDS

Ordering Plunger Packages

Use the part numbering system below and the information on this page to order plunger packages:

P12

PUMP CODE

From "Pump Code" column of **Availability Chart**

P42H

HYPHEN

PLUNGER CODE

1. Find Pump Model in **Availability Chart** to determine which **Plunger Chart** (A, B, or C) to use.
2. Using the referenced **Plunger Chart**, go down the first row to find the pump's current plunger size, then over to the desired plunger size to find the correct plunger code.

Notes:

Use the **Availability Chart** to verify that the desired plunger size is available for a specific pump model.

Plunger Codes beginning with "S" indicate that stuffing boxes are included in the package.

Plunger Codes beginning with "P" indicate that stuffing boxes are not included and do not need to be changed to go from current to desired plunger size.

Availability Chart

Pump Model	Pages B-	Pump Code	Plunger Chart	Available Plunger Sizes												
				7	8	9	10	11	12	13	15	16	17			
3015	20-21	P301	A	•	•	•	•	•								
3015B	36-37	P300	A	•	•	•	•	•								
3015N	27-28	P300	A	•	•	•	•	•								
3015Q	49-50	P30Q	A	•	•	•	•	•								
3015W	47-48	P300	A	•	•	•	•	•								
3115T	45-46	P311	A	•	•	•	•									
3515Q	43-44	P35Q	A	•	•	•	•									
3615 (Gen 1)	16-17, 19	P421	B			•	•	•	•	•	•					
3615HF	16-18	P42H	B			•	•	•	•	•	•	•				
3715B	34-35	P421	B			•	•	•	•	•						
3715W	38-39	P37W	A		•	•	•	•								
3715WZ	41-42	P37Z	A		•	•	•	•								
4015B	32-33	P421	B			•	•	•	•	•						
4215 (Gen 1)	16-17, 19	P421	B			•	•	•	•	•	•					
4215HF	16-18	P42H	B			•	•	•	•	•	•	•				
4215N (Current)	22-23	P42H	B				•	•	•	•	•	•				
4215N (Gen 1)	22, 24	P421	B				•	•	•	•	•					
4215QN	25-26	P42Q	B				•	•	•	•	•					
4515B (Current)	29-30	P45H	B				•	•	•	•	•	•				
4515B (Gen 1)	29, 31	P451	B				•	•	•	•	•					
5015G	51-52	P50G	C										•			
5015Q	14-15	P50Q	B						•				•			

Plunger Chart B

Current Plunger Size	Desired Plunger Size						
	9	10	11	12	13	15	16
9	-	P10	P11	S12	S13	S15	S16
10	P9	-	P11	S12	S13	S15	S16
11	P9	P10	-	S12	S13	S15	S16
12	S9	S10	S11	-	P13	P15	S16
13	S9	S10	S11	P12	-	P15	S16
15	S9	S10	S11	P12	P13	-	S16
16	S9	S10	S11	S12	S13	S15	-

- Available Plunger size
- Plunger size not available for this model

Plunger Chart A

Current Plunger Size	Desired Plunger Size				
	7	8	9	10	11
7	-	P8	S9	S10	S11
8	P7	-	S9	S10	S11
9	S7	S8	-	P10	S11
10	S7	S8	P9	-	S11
11	S7	S8	S9	S10	-

Plunger Chart C

Current Plunger Size	Desired Plunger Size	
	15	17
15	-	P17
17	P15	-

PUMPS & FLUID ENDS

UP TO 15,000 PSI (1000 BAR)



TOOLS

Pump Wrenches

The only special tool needed to work on a Jetstream UNx pump



Part No.	Size	Pump Models	Use
50889	7/8"	5015G, 5015Q, 4215HF, 4215, 3615HF, 3615, 4215N, 4215QN, 4515B, 4015B, 3715B	Manifold & Gland Nut
50064	3/4"	3015, 3015B, 3015N, 3015Q, 3015W	
25421	3/4"	3715W, 3715WZ, 3515Q, 3115T	Manifold
26544	5/8"	3715W, 3715WZ, 3515Q, 3115T	Gland Nut

Valve Puller

The perfect tool for easily extracting Uni-Valves from the manifold

Sold individually

Part No. 70179



Belt Tension Gauges

Ensure pump drive belts are properly tensioned for proper pump operation and maximum belt life.

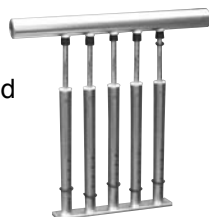
For use with V-belts

Part No. 26993



For use with PowerBand and synchronous belts

Part No. 70930



Manifold Mounting Studs

For easy and safe removal of manifolds during pressure conversions that require a manifold change (e.g. 10,000 psi to 40,000 psi)



To use, replace the top two outer manifold bolts with the mounting studs. Then, remove all bolts and the Trunnion rod (hinge rod). The manifold can then be easily slid out and replaced with another.

For use with the following models:

5015Q	3615	4215QN
4215HF	4515B	4015B
4215	4215N	3715B
3615HF		

Sold Individually

Part No. 54261

For use with the following models:

3015	3015B	3515Q
3015N	3015Q	3715W
3015W	3115T	3715WZ

Sold Individually

Part No. 56742

Pump Operation & Maintenance DVD

An excellent learning tool, the Pump Operation and Maintenance DVD from Jetstream covers important topics such as waterblast safety, waterblast unit and pump maintenance and operation.



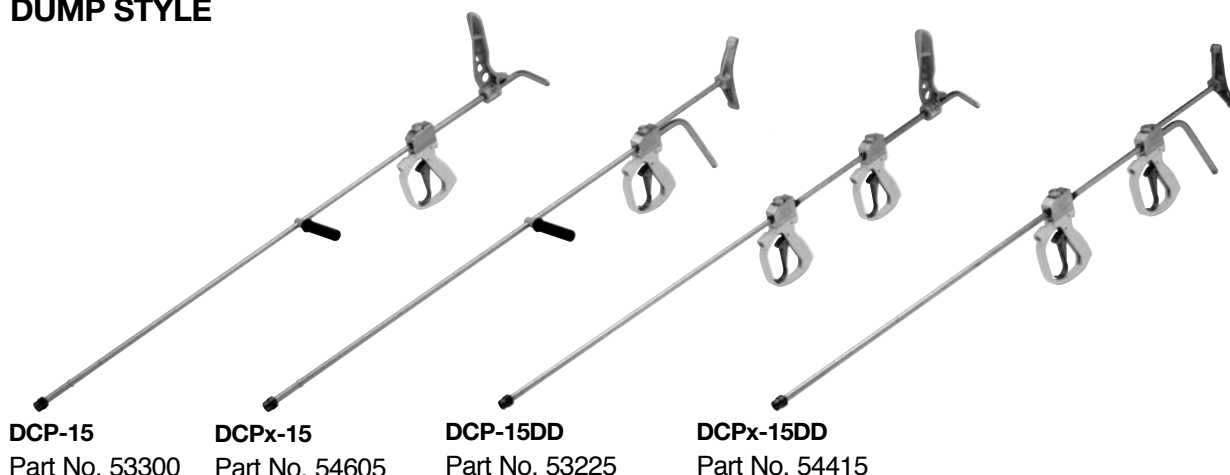
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GUNS, VALVES & FILTERS

UP TO 15,000 PSI (1000 BAR)



DURASAFE™ HAND GUNS DUMP STYLE



DCP-15

Part No. 53300

DCPx-15

Part No. 54605

DCP-15DD

Part No. 53225

DCPx-15DD

Part No. 54415

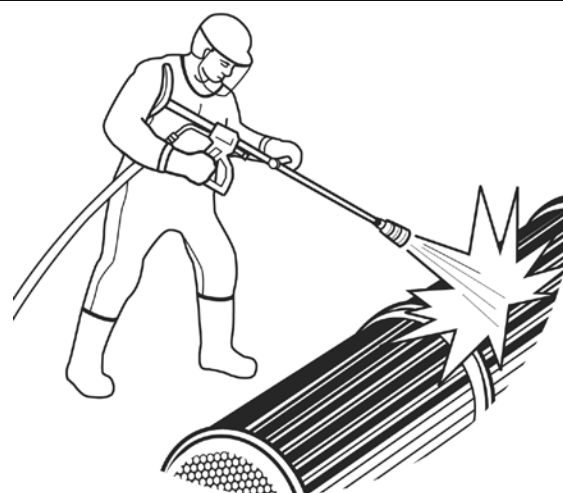
DuraSafe 15,000 psi hand-operated dump style control guns allow the operator to have complete control of the pressure at all times. Designed with safety, comfort, and simplicity in mind, they are used for a variety of surface cleaning applications and are available in four standard configurations.

- 30-second field replaceable cartridge design for minimal downtime
- 48" distance from primary trigger to end of barrel to ensure maximum operator safety**
- Lightweight
- Special cam-operated trigger cuts required engagement force in half
- DCP models feature fully adjustable body pad for maximum operator comfort in any position (shoulder, hip, chest, etc.), while an ergonomically designed shoulder stock is included with DCPx models
- Adjustable secondary grip included with single trigger models
- Dual trigger models require both triggers to be engaged in order to build system pressure for maximum operator safety
- All pressure-bearing components are stainless steel
- Includes coupling to attach 1/4" NPT Male nozzles (see HHTC Nozzles, page E-9)

REPLACEMENT CARTRIDGE

All 15,000 psi DuraSafe Dump Style Control Guns utilize the C-15 cartridge, shown below, to completely rebuild the dump valve in about 30 seconds!

Part No. 50902



Part No.	Model	Trigger Actuation	Rest Type	Inlet Connection*	Outlet (Nozzle) Connection*	Length**		Weight		Max. Operating Pressure	
						in	cm	lb	kg	psi	bar
53300	DCP-15	Single	Body Pad	1/2" NPT Male	3/8" NPT Male	71	180	13	6	15,000	1000
54605	DCPx-15	Single	Shoulder Stock	1/2" NPT Male	3/8" NPT Male	66	167	12	5	15,000	1000
53225	DCP-15DD	Dual	Body Pad	1/2" NPT Male	3/8" NPT Male	75	190	17	8	15,000	1000
54415	DCPx-15DD	Dual	Shoulder Stock	1/2" NPT Male	3/8" NPT Male	70	177	16	7	15,000	1000

* Adapters available for other connection types. See details on all connection types beginning on page I-2.

** Custom length barrels available. Call factory for information.

GUNS, VALVES & FILTERS

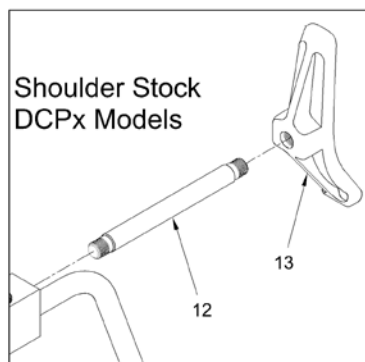
UP TO 15,000 PSI (1000 BAR)



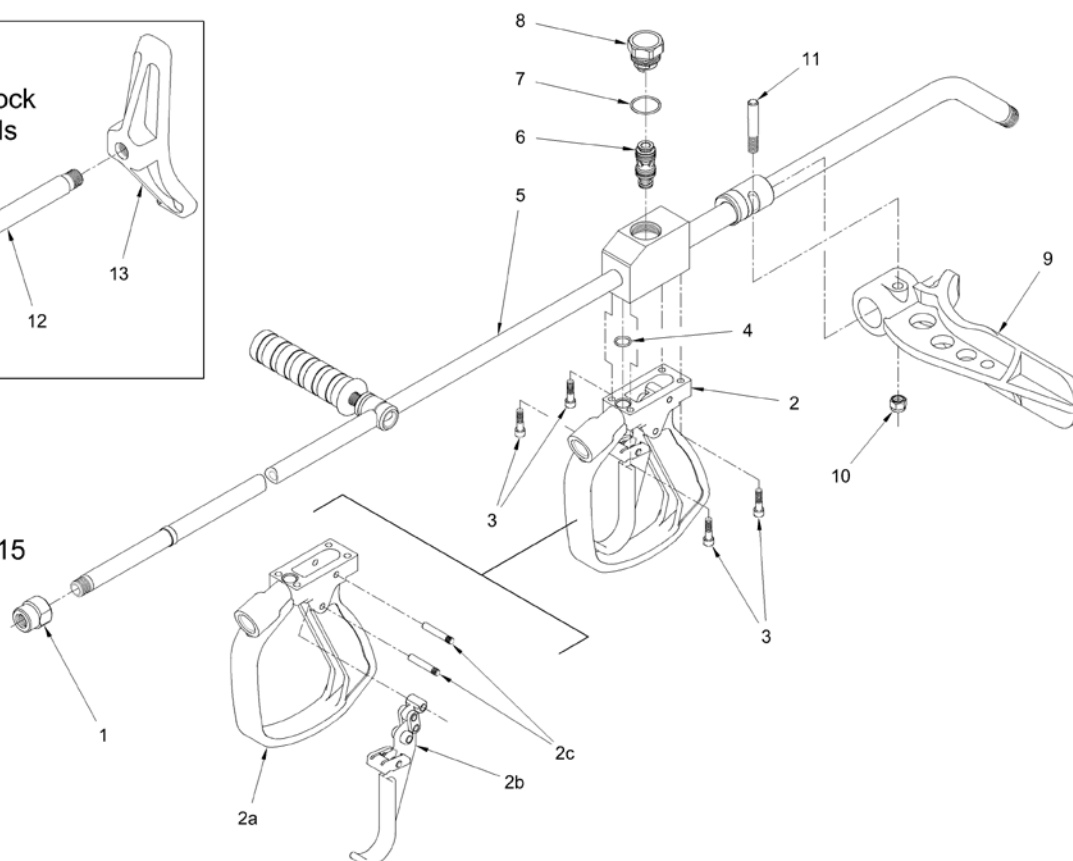
DURASAFE™ HAND GUNS

DUMP STYLE

REPLACEMENT PARTS



Model DCP-15
Shown



Item	Part No.	Description
1	26061	Coupling
2	55480	Handle Assembly
2a	55481	Handle
2b	J55617	Trigger Assembly
2c	26116	Pin
3	26689	Capscrew
4	25193	O-Ring
5	53270	DCP-15 Body Assembly
	54360	DCPx-15 Body Assembly
	53240	DCP-15DD Body Assembly
	54420	DCPx-15DD Body Assembly

Item	Part No.	Description
6	50902	C-15 Cartridge
7	25467	O-Ring
8	53175	Cartridge Plug (includes O-Ring, item 7)
9	53304	Body Pad (DCP models only)
10	25296	Nut (DCP models only)
11	53303	Stud (DCP models only)
12	50127	Extension (DCPx models only)
13	50124	Shoulder Stock (DCPx models only)

Related Items

MULTI-GUN VALVE (MGV) — See page C-11

ORBI-JET™ NOZZLES — See pages E-1 – E-5

HHTC NOZZLES — See page E-9

SAFETY SHROUDS & WHIP HOSES — See page G-3

GUNS, VALVES & FILTERS

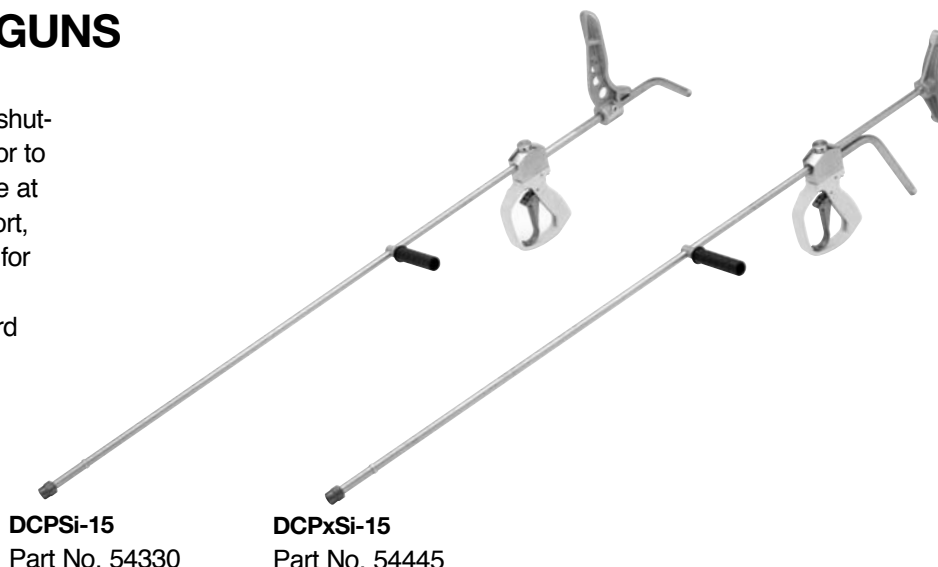
UP TO 15,000 PSI (1000 BAR)



DURASAFE™ HAND GUNS SHUT-IN STYLE

DuraSafe 15,000 psi hand-operated shut-in style control guns allow the operator to have complete control of the pressure at all times. Designed with safety, comfort, and simplicity in mind, they are used for a variety of surface cleaning applications and are available in two standard configurations.

- Shut-in style control guns do not dump water when the trigger is released. Useful in applications where excess water spillage and disposal are concerns. Use with plunger style pumps such as the UNx® requires the installation of a Shut-In Regulator Valve (see page C-14).
- 30-second field replaceable cartridge design for minimal downtime
- 48" distance from primary trigger to end of barrel to ensure maximum operator safety**
- Lightweight
- Special cam-operated trigger cuts required engagement force in half
- DCPSi model features a fully adjustable body pad for maximum operator comfort in any position (shoulder, hip, chest, etc.)
- DCPxSi model includes an ergonomically designed shoulder stock
- Adjustable secondary hand grip
- All pressure-bearing components are stainless steel
- Includes coupling to attach 1/4" NPT Male nozzles (see HHTC Nozzles, page E-9)



REPLACEMENT CARTRIDGE

15,000 psi DuraSafe Shut-in Style Control Guns utilize the CPSi-15 cartridge, shown below, to completely rebuild the gun in about 30 seconds!

Part No. 52635



Part No.	Model	Rest Type	Inlet Connection*	Outlet (Nozzle) Connection*	Length**		Weight		Max. Operating Pressure	
					in	cm	lb	kg	psi	bar
54330	DCPSi-15	Body Pad	1/2" NPT Male	3/8" NPT Male	71	180	13	6	15,000	1000
54445	DCPxSi-15	Shoulder Stock	1/2" NPT Male	3/8" NPT Male	70	177	12	5	15,000	1000

* Adapters available for other connection types. See details on all connection types beginning on page I-2.

** Custom length barrels available. Call factory for information.

GUNS, VALVES & FILTERS

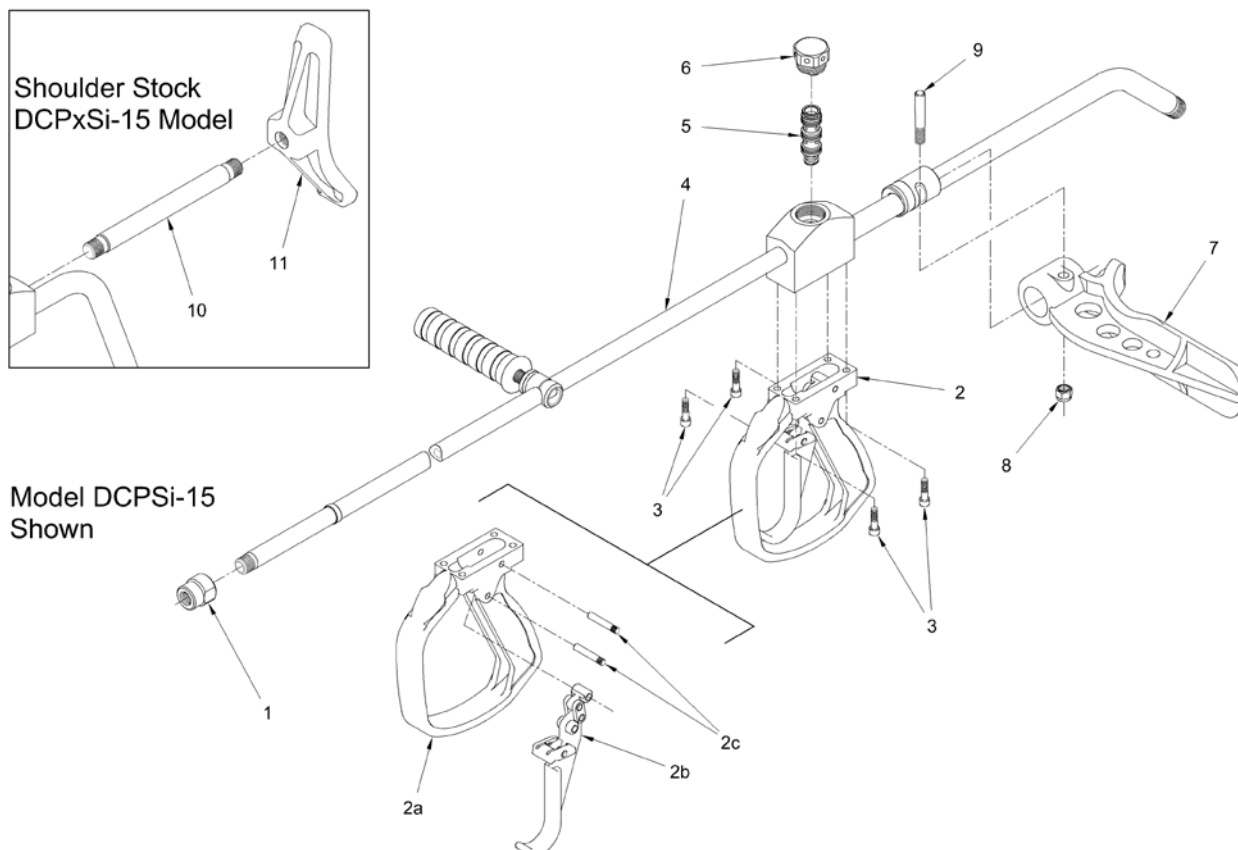
UP TO 15,000 PSI (1000 BAR)



DURASAFE™ HAND GUNS

SHUT-IN STYLE

REPLACEMENT PARTS



Item	Part No.	Description
1	26061	Coupling
2	J55620	Handle Assembly
2a	J55614	Handle
2b	J55617	Trigger Assembly
2c	26116	Pin
3	26689	Capscrew
4	52645	DCPSi-15 Body Assembly
	54450	DCPxSi-15 Body Assembly

Item	Part No.	Description
5	52635	CPSi-15 Cartridge
6	52543	Cartridge Plug
7	53304	Body Pad (DCPSi-15)
8	25296	Nut (DCPSi-15)
9	53303	Stud (DCPSi-15)
10	50127	Extension (DCPxSi-15)
11	50124	Shoulder Stock (DCPxSi-15)

Related Items

SHUT-IN REGULATOR VALVE — See page C-14

ORBI-JET™ NOZZLES — See pages E-1 – E-5

HHTC NOZZLES — See page E-9

SAFETY SHROUDS & WHIP HOSES — See page G-3

GUNS, VALVES & FILTERS

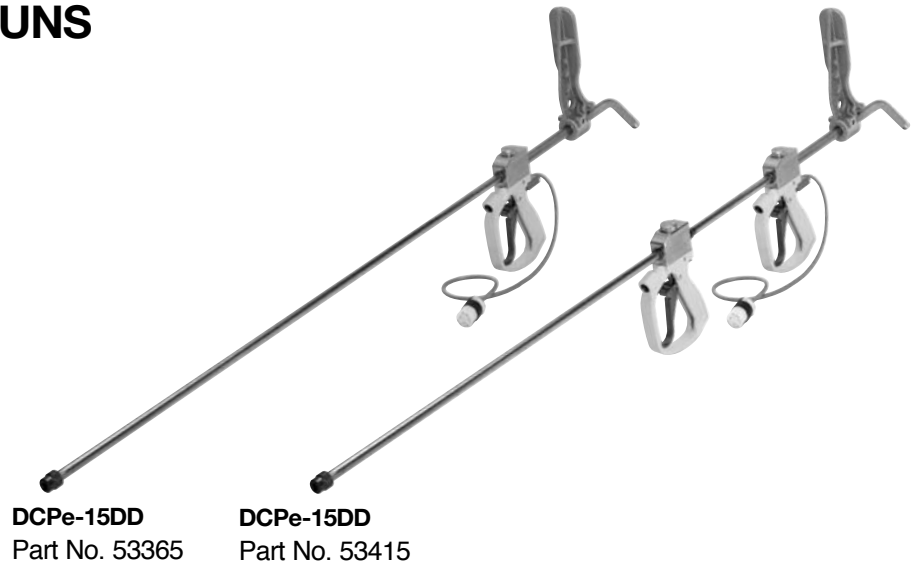
UP TO 15,000 PSI (1000 BAR)



DURASAFE™ HAND GUNS ELECTRIC DUMP STYLE

DuraSafe 15,000 psi electric hand-operated dump style control guns allow the operator to have complete control of the pressure at all times. Designed with safety, comfort, and simplicity in mind, they are used for a variety of surface cleaning applications and are available in standard configurations.

- Electric control guns are designed for units that utilize electric solenoid-operated throttle controls, popular in a handful of older waterblaster models
- 30-second field replaceable cartridge design for minimal downtime
- 48" distance from primary trigger to end of barrel to ensure maximum operator safety**
- Lightweight
- Special cam-operated trigger cuts required engagement force in half
- Fully adjustable body pad for maximum operator comfort in any position (shoulder, hip, chest, etc.)
- Adjustable secondary grip included with model DCPe-15
- Model DCPe-15DD requires both triggers to be engaged in order to build system pressure for maximum operator safety
- All pressure-bearing components are stainless steel
- Includes coupling to attach 1/4" NPT Male nozzles (see HHTC Nozzles, page E-9)



REPLACEMENT CARTRIDGE

All 15,000 psi DuraSafe Dump Style Control Guns utilize the C-15 cartridge, shown below, to completely rebuild the dump valve in about 30 seconds!

Part No. 50902



Ergonomically designed body pad helps to reduce fatigue and ensure operator safety. Adjustable for maximum comfort in any position.



Body pad
on chest



Body pad
on hip



Body pad
on shoulder

Part No.	Model	Trigger Actuation	Inlet Connection*	Outlet (Nozzle) Connection*	Length**		Weight		Max. Operating Pressure	
					in	cm	lb	kg	psi	bar
53365	DCPe-15	Single	1/2" NPT Male	3/8" NPT Male	71	180	13	6	15,000	1000
53415	DCPe-15DD	Double	1/2" NPT Male	3/8" NPT Male	75	190	17	8	15,000	1000

* Adapters available for other connection types. See details on all connection types beginning on page I-2.

** Custom length barrels available. Call factory for information.

GUNS, VALVES & FILTERS

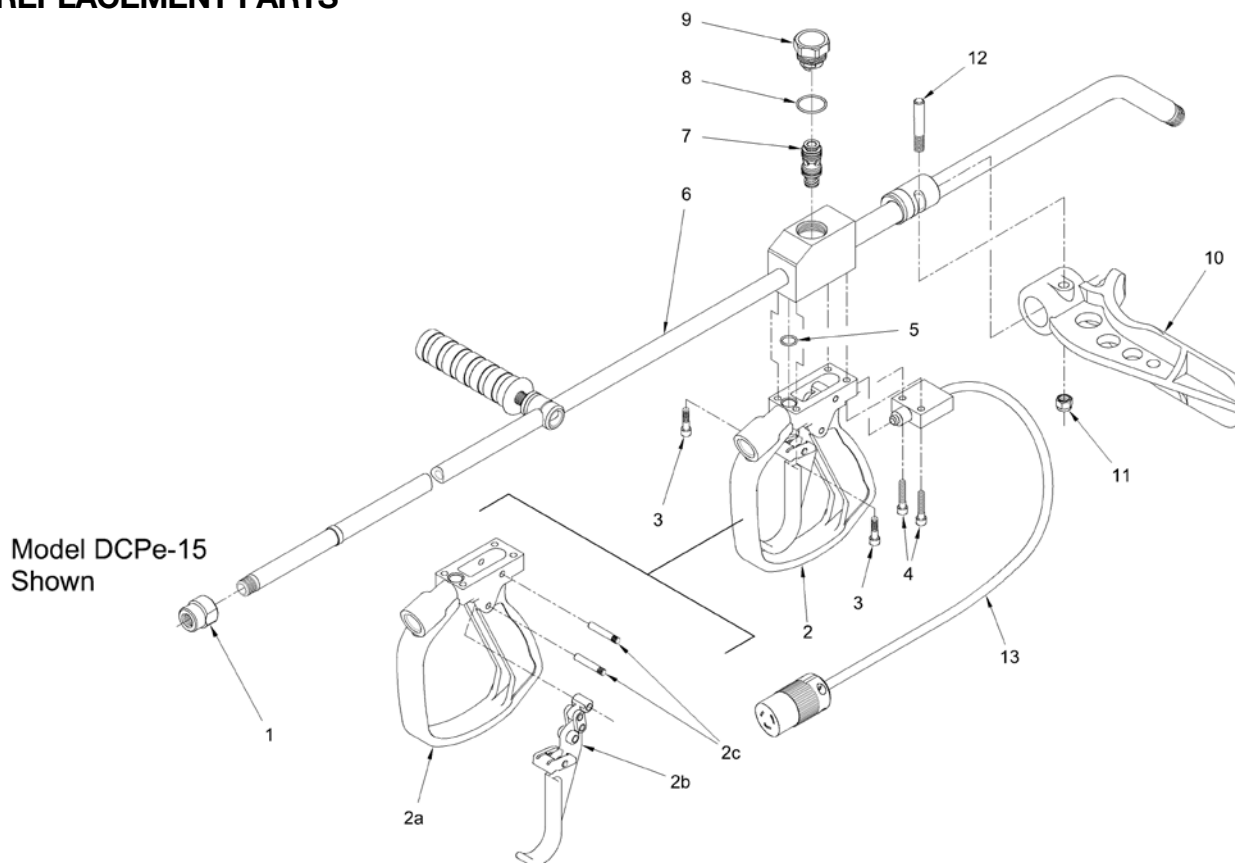
UP TO 15,000 PSI (1000 BAR)



DURASAFE™ HAND GUNS

ELECTRIC DUMP STYLE
REPLACEMENT PARTS

GUNS, VALVES
& FILTERS



Item	Part No.	Description
1	26061	Coupling
2	J55685	Primary Handle Assembly (Both Models)
	55480	Secondary Handle Assembly (DCPe-15DD only)
2a	J55682	Primary Handle (Both Models)
	55481	Secondary Handle (DCPe-15DD only)
2b	J55617	Trigger Assembly
2c	26116	Pin
3	26689	Capscrew
4	26126	Capscrew
5	25193	O-Ring

Item	Part No.	Description
6	53270	DCPe-15 Body Assembly
	53240	DCPe-15DD Body Assembly
7	50902	C-15 Cartridge
8	25467	O-Ring
9	53175	Cartridge Plug (includes O-Ring, item 8)
10	53304	Body Pad
11	25296	Nut
12	53303	Stud
13	J55691	Switch Assembly

Related Items

ORBI-JET™ NOZZLES — See pages E-1 – E-5

HTTC NOZZLES — See page E-9

SAFETY SHROUDS & WHIP HOSES — See page G-3

GUNS, VALVES & FILTERS

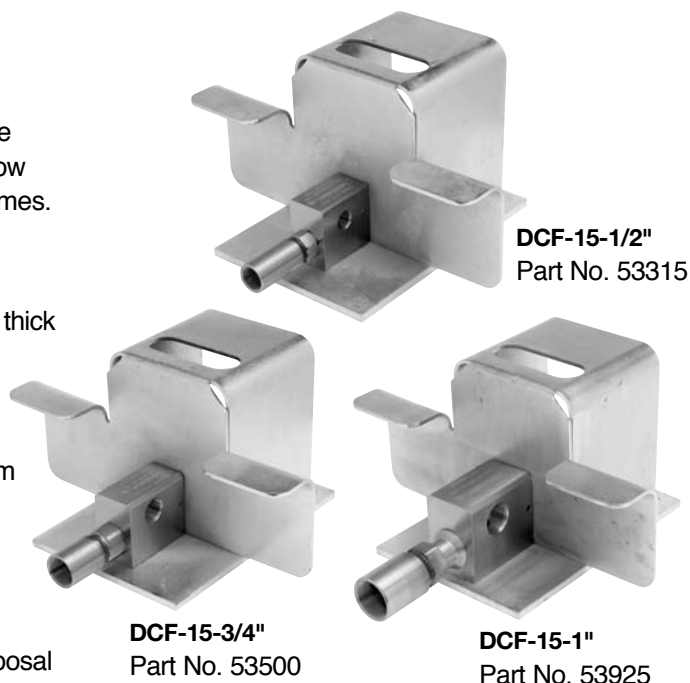
UP TO 15,000 PSI (1000 BAR)



DURASAFE™ FOOT GUNS DUMP STYLE

Ideal for a variety of waterblast tube cleaning applications, the DuraSafe family of foot-operated dump style control guns allow the operator to have complete control of the pressure at all times.

- 30-second field replaceable cartridge design for minimal downtime
- Safest foot valves in the industry! Custom safety cage and thick blast wall protect operator better than any foot control gun in the industry
- Pipe threaded (NPT) inlet and outlet
- Built-in "wings" protect high pressure hoses and fittings from external damage
- All pressure-bearing components precision machined from stainless steel
- Plated base and cage for corrosion resistance
- Threaded diffuser to route dump water for collection or disposal



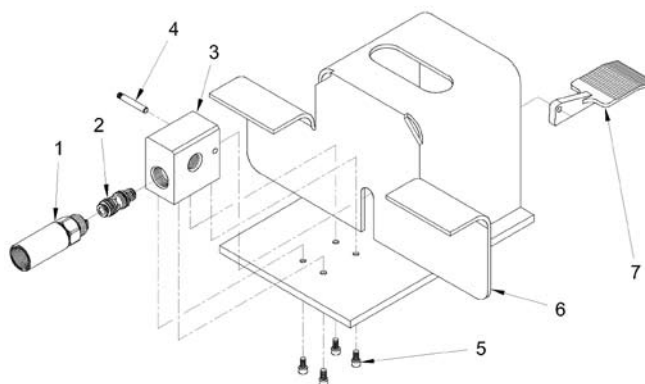
GUNS, VALVES
& FILTERS

Part No.	Model	Inlet & Outlet Connections*	Diffuser Outlet Connection	Maximum Flow		Dimensions (H x W x D)		Weight		Max. Operating Pressure	
				gpm	lpm	in	mm	lb	kg	psi	bar
53315	DCF-15-1/2"	1/2" NPT Fml	3/4" NPT Fml	35	130	7.9 x 14.8 x 13.3	200 x 375 x 338	25	11	15,000	1000
53500	DCF-15-3/4"	3/4" NPT Fml	1" NPT Fml	75	285	7.9 x 14.8 x 13.5	200 x 357 x 343	26	12	15,000	1000
53925	DCF-15-1"	1" NPT Fml	1-1/4" NPT Fml	125	475	7.9 x 14.8 x 15.5	200 x 375 x 393	29	13	15,000	1000

* See details on all connection types beginning on page I-2.

Replacement Parts

Item	Part No.	Description
1	50460	Diffuser (DCF-15-1/2")
	51638	Diffuser (DCF-15-3/4")
	53959	Diffuser (DCF-15-1")
2	50902	C-15 Cartridge (DCF-15-1/2")
	52750	C-15 Mag Cartridge (DCF-15-3/4")
	53915	C-15-1" Cartridge (DCF-15-1")
3	53368	Body (DCF-15-1/2")
	53549	Body (DCF-15-3/4")
	53954	Body (DCF-15-1")
4	26453	Pin
5	25261	Capscrew
6	53386	Base
7	53373	Pedal



REPLACEMENT CARTRIDGE

All 15,000 psi DuraSafe Dump Style Control Guns utilize the C-15 cartridge, shown below, to completely rebuild the dump valve in about 30 seconds!

Part No. 50902



Related Items

PIPE CLEANING NOZZLES — See pages E-13 – E-18

TUBE CLEANING NOZZLES — See pages E-19 – E-30

MULTI-GUN VALVE (MGV) — See page C-11

STRAIN RELIEF HOSES — See page G-4

FLEX LANCE SAFETY GRIP — See page G-5

GUNS, VALVES & FILTERS

UP TO 15,000 PSI (1000 BAR)

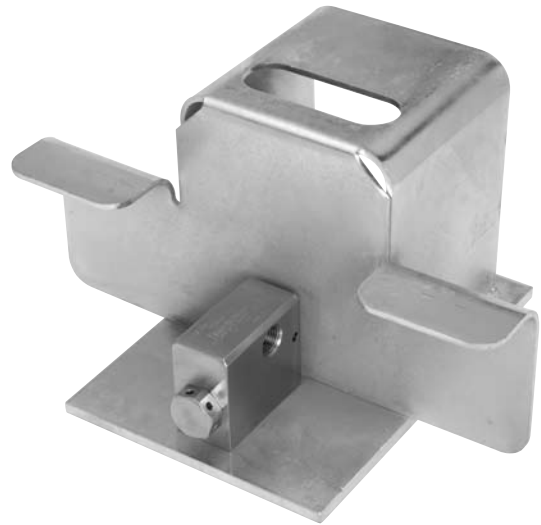


DURASAFE™ FOOT GUNS

SHUT-IN STYLE

Ideal for a variety of waterblast tube cleaning applications, the DCFSi-15 DuraSafe foot-operated shut-in style control gun allows the operator to have complete control of the pressure at all times.

- Shut-in style control guns do not dump water when the trigger is released. Useful in applications where excess water spillage and disposal are concerns. Use with plunger style pumps such as the UNx® require the installation of a Shut-In Regulator Valve (see page C-14)
- 30-second field replaceable cartridge design for minimal downtime
- Safest shut-in foot valve in the industry! Custom safety cage and thick blast wall protect operator better than any foot control gun in the industry
- Pipe threaded (NPT) inlet and outlet
- Built-in “wings” protect high pressure and fittings from external damage
- All pressure-bearing components precision machined from stainless steel
- Plated base and cage for corrosion resistance



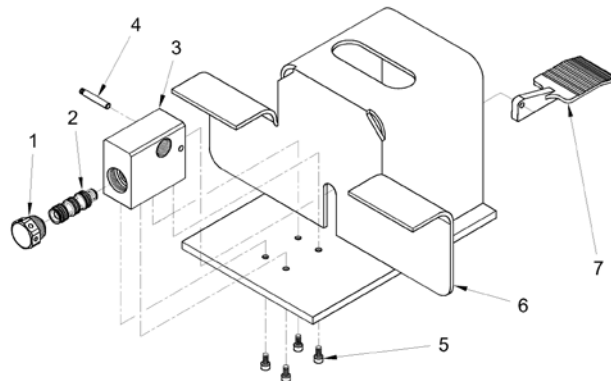
Part No.	Model	Inlet & Outlet Connections*	Maximum Flow		Dimensions (H x W x D)		Weight		Max. Operating Pressure	
			gpm	lpm	in	mm	lb	kg	psi	bar
54455	DCFSi-15	1/2" NPT Fml	35	130	7.9 x 14.8 x 11.3	200 x 375 x 286	25	11	15,000	1000

* See details on all connection types beginning on page I-2.

REPLACEMENT CARTRIDGE

15,000 psi DuraSafe Shut-in Style Control Guns utilize the CPSi-15 cartridge, shown below, to completely rebuild the gun in about 30 seconds!

Part No. 52635



Replacement Parts

Item	Part No.	Description
1	52543	Cartridge Plug
2	52635	CPSi-15 Cartridge
3	53374	Body
4	26453	Pin
5	25261	Capscrew
6	53386	Base
7	53373	Pedal

Related Items

PIPE CLEANING NOZZLES — See pages E-13 – E-18
TUBE CLEANING NOZZLES — See pages E-19 – E-30
SHUT-IN REGULATOR VALVE — See page C-14
STRAIN RELIEF HOSES — See page G-4
FLEX LANCE SAFETY GRIP — See page G-5

GUNS, VALVES & FILTERS

UP TO 15,000 PSI (1000 BAR)

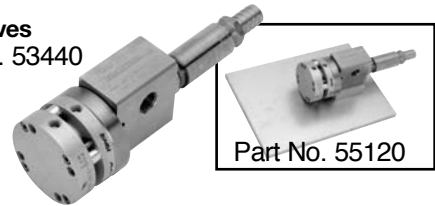


AIR-OPERATED DIVERTER VALVES DUMP STYLE

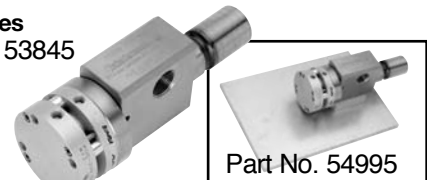
The Air-Operated Diverter Valve allows an operator to remotely control pressure in cleaning applications up to 15,000 psi. When air is sent to the cylinder, the valve closes and allows the system to build pressure. The valve opens when the air is exhausted, reducing system pressure to near atmospheric.

- 30-second field replaceable cartridge design for minimal downtime
- Remote pneumatic operation for reduced operator fatigue and added convenience and safety
- Pipe threaded (NPT) inlet and outlet
- Heavy-duty air cylinder
- All pressure-bearing components precision machined from stainless steel
- Available in three sizes with or without plated steel base

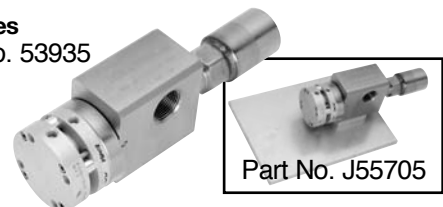
1/2" Valves
Part No. 53440



3/4" Valves
Part No. 53845



1" Valves
Part No. 53935



GUNS, VALVES & FILTERS

Part No.	Mounting	Inlet & Outlet Connections*	Diffuser Outlet Connection	Maximum Flow		Dimensions (H x W x D)		Weight		Max. Operating Pressure	
				gpm	lpm	in	mm	lb	kg	psi	bar
53440	No Base	1/2" NPT Fml	3/4" NPT Fml	35	130	3.3 x 3.1 x 8.6	84 x 79 x 217	6.5	2.9	15,000	1000
55120	Base-Mount	1/2" NPT Fml	3/4" NPT Fml	35	130	3.8 x 8.0 x 13.3	97 x 203 x 338	16.1	7.3	15,000	1000
53845	No Base	3/4" NPT Fml	1" NPT Fml	75	285	3.4 x 3.1 x 8.8	87 x 79 x 223	7.7	3.5	15,000	1000
54995	Base-Mount	3/4" NPT Fml	1" NPT Fml	75	285	4.0 x 8.0 x 13.5	102 x 203 x 343	17.3	7.9	15,000	1000
53935	No Base	1" NPT Fml	1-1/4" NPT Fml	125	475	4.0 x 3.8 x 11.3	102 x 79 x 287	12.7	5.8	15,000	1000
J55705	Base-Mount	1" NPT Fml	1-1/4" NPT Fml	125	475	4.5 x 8.0 x 15.5	113 x 203 x 393	22.3	10.1	15,000	1000

* See details on all connection types beginning on page I-2.

Replacement Parts

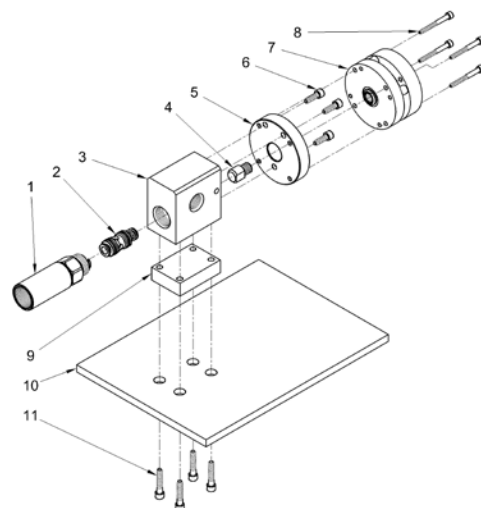
Item	Part No.	Description
1	50460	Diffuser (1/2" Valves)
	51638	Diffuser (3/4" Valves)
	53959	Diffuser (1" Valves)
2	50902	C-15 Cartridge (1/2" Valves)
	52750	C-15 Mag Cartridge (3/4" Valves)
	53915	C-15-1" Cartridge (1" Valves)
3	53368	Body (1/2" Valves)
	53549	Body (3/4" Valves)
	53954	Body (1" Valves)
4	53424	Pusher
5	J56366	Mounting Plate (1/2" & 3/4" Valves)
	54321	Mounting Plate (1" Valve)
6	25206	Capscrew (1/2" & 3/4" Valves)
	J70816	Capscrew (1" Valve)
7	27251	Air Cylinder (1/2" & 3/4" Valves)
	54342	Air Cylinder (1" Valve)
8	27107	Capscrew (1/2" & 3/4" Valves)
	28399	Capscrew (1" Valve)
9	53788	Mounting Block (Base-Mounted Models)
10	53384P	Base (Base-Mounted Models)
11	26126	Capscrew (Base-Mounted Models)

Air Specifications

Air Inlet Connection: 1/2" & 3/4" Valves: 1/8" NPT Fml
1" Valves: 1/4" NPT Fml

Minimum Inlet Air Pressure: 70 psi (4.8 bar)

Maximum Inlet Air Pressure: 125 psi (8.6 bar)



GUNS, VALVES & FILTERS

UP TO 15,000 PSI (1000 BAR)



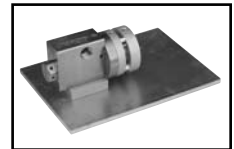
AIR-OPERATED DIVERTER VALVES SHUT-IN STYLE

Shut-In, Air-Operated Diverter Valves allow an operator to remotely control pressure in cleaning applications up to 15,000 psi. When air is sent to the cylinder, the valve opens to allow water to the nozzle. The valve closes when the air is exhausted, preventing water from reaching the nozzle while maintaining system pressure.

- Use with plunger style pumps such as the UNx® requires the installation of a Shut-In Regulator Valve (see page C-14)
- 30-second field replaceable cartridge design for minimal downtime
- Remote pneumatic operation for reduced operator fatigue and added convenience and safety
- Pipe threaded (NPT) inlet and outlet
- Heavy-duty air cylinder
- All pressure-bearing components precision machined from stainless steel
- Available with or without plated steel base



Part No. 53680



Part No. J55710

REPLACEMENT CARTRIDGE

15,000 psi Shut-in Style Diverter Valves utilize the CPSi-15 cartridge, shown below, to completely rebuild the gun in about 30 seconds!

Part No. 52635



Part No.	Mounting	Inlet & Outlet Connections*	Maximum Flow		Dimensions (H x W x D)		Weight		Max. Operating Pressure	
			gpm	lpm	in	mm	lb	kg	psi	bar
53680	No Base	1/2" NPT Fml	35	130	3.3 x 3.1 x 6.1	85 x 79 x 154	6.4	2.9	15,000	1000
J55710	Base-Mount	1/2" NPT Fml	35	130	4.0 x 8.0 x 11.3	101 x 203 x 286	16.0	7.3	15,000	1000

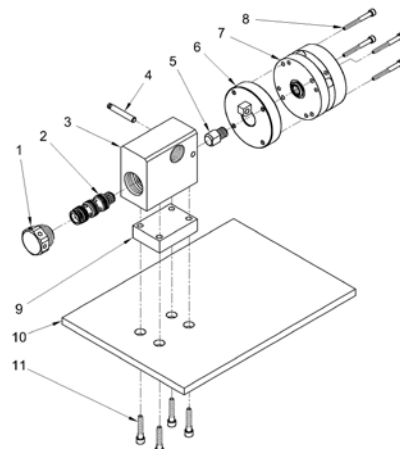
* See details on all connection types beginning on page I-2.

Air Specifications

Air Inlet Connection: 1/8" NPT Fml
Minimum Inlet Air Pressure: 70 psi (4.8 bar)
Maximum Inlet Air Pressure: 125 psi (8.6 bar)

Replacement Parts

Item	Part No.	Description
1	52543	Cartridge Plug
2	52635	CPSi-15 Cartridge
3	53374	Body
4	26453	Pin
5	53424	Pusher
6	53423	Mounting Plate
7	27251	Air Cylinder
8	27107	Capscrew
9	53788	Mounting Block (Base-Mounted Model)
10	53384P	Base (Base-Mounted Model)
11	26126	Capscrew (Base-Mounted Model)



GUNS, VALVES & FILTERS

UP TO 15,000 PSI (1,000 BAR)



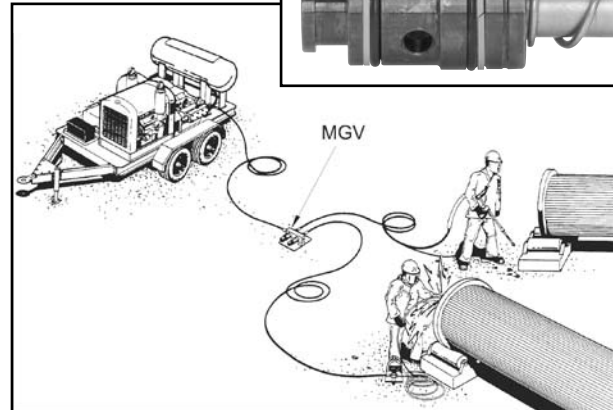
MULTI-GUN VALVE (MGV)

The MGV (Multi-Gun Valve) allows two dump style waterblast guns to be operated independently when connected to one waterblast pump. The MGV will divide the pump's total flow between the guns and will maintain system pressure when either or both guns are dumping.

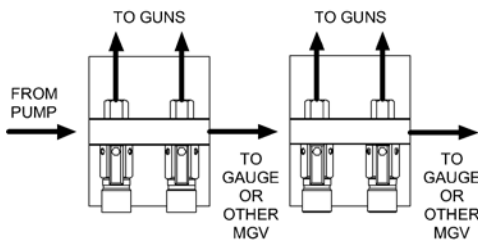
- Setup using two hand adjustment dials is fast and simple
- Utilizes two valve cartridges that can be easily replaced to completely repair the valve in the field in only three minutes
- All pressure-bearing components are stainless steel
- Zinc-plated base for corrosion resistance
- Pipe threaded (NPT) inlet and outlet connections
- Additional Multi-Gun Valves can be added to a system to further increase the number of tools in operation by a single waterblast unit



REPLACEMENT CARTRIDGE



Multiple MGV Configurations

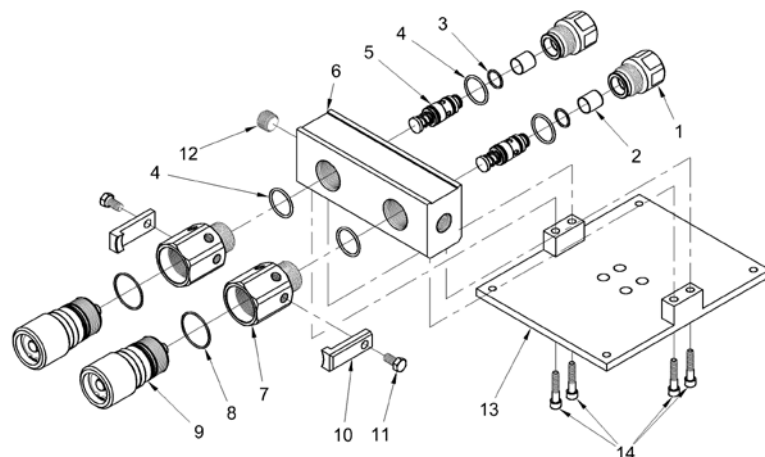


Part No.	Inlet 1 Connection*	Inlet 2/ Gauge Connection*	Outlet (Gun) Connections*	Dimensions						Weight		Max. Operating Pressure	
				Height (H)		Width (W)		Depth (D)		lb	kg	psi	bar
51785	3/4" NPT Fml	1/2" NPT Fml	1/2" NPT Fml	in	mm	in	mm	in	mm				
				4.3	109	8.0	203	10.8	275	29	13	15,000	1000

* See details on all connection types beginning on page I-2. Inlet and Outlet (Gauge) connections can be reversed.

Replacement Parts

Item	Part No.	Description
1	54077	Outlet Adapter
2	52201	Diffuser
3	26782	O-Ring
4	26509	O-Ring
5	50234	Cartridge
6	51767	Manifold
7	51769	Adjuster Adapter
8	25603	O-Ring
9	50900	Adjuster
10	50795	Locking Arm
11	25593	Capscrew
12	26115	1/2" NPT Plug
	26164	3/4" NPT Plug
13	50811	Base
14	25700	Capscrew



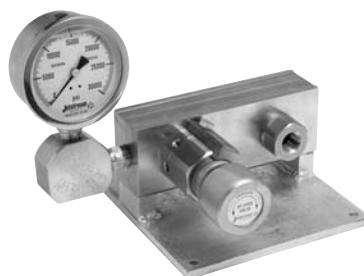
GUNS, VALVES & FILTERS

UP TO 15,000 PSI (1000 BAR)



MULTI-UNIT MANIFOLDS

- Combine flow of two waterblast units
- Two sizes available
- Built-in bypass valve and pressure gauge for centralized, remote pressure control
- All pressure-bearing components are stainless steel
- Zinc-plated base for corrosion resistance
- Pipe threaded (NPT) inlet and outlet connections



15,000 psi Model
Part No. 52840



10,000 psi High Flow Model
Part No. 55330

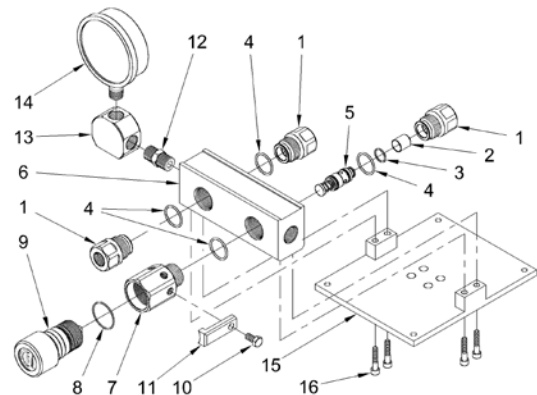
Part No.	Inlet Connections*	Outlet Connection*	Maximum Combined Flow		Dimensions						Weight		Max. Operating Pressure	
					Height (H)		Width (W)		Depth (D)					
			gpm	lpm	in	mm	in	mm	in	mm	lb	kg	psi	bar
52840	1/2" NPT Fml	3/4" NPT Fml	100	380	4.3	109	8.0	203	10.8	275	27	12	15,000	1000
55330	1" NPT Fml	1" NPT Fml	200	760	14.0	360	8.0	203	10.0	254	30	14	10,000	700

* See details on all connection types beginning on page I-2.

Replacement Parts

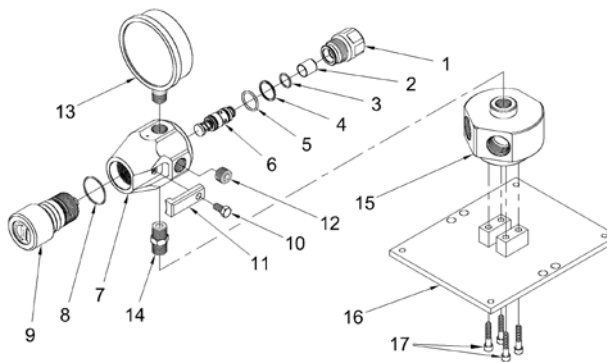
15,000 psi Model

Item	Part No.	Description
1	54077	Outlet Adapter
2	52201	Diffuser
3	26782	O-Ring
4	26509	O-Ring
5	50234	Cartridge
6	51767	Manifold
7	51769	Adjuster Adapter
8	25603	O-Ring
9	52144	Adjuster
10	25593	Capscrew
11	50795	Locking Arm
12	50496	Nipple
13	50300	Elbow
14	51126	Gauge (0-30,000 psi)
15	50811	Base
16	25700	Capscrew



10,000 psi High Flow Model

Item	Part No.	Description
1	54077	Outlet Adapter
2	52201	Diffuser
3	26782	O-Ring
4	53912	Backup Ring
5	26522	O-Ring
6	50234	Cartridge
7	53859	Body
8	25603	O-Ring
9	52144	Adjuster
10	25593	Capscrew
11	50795	Locking Arm
12	26115	Plug
13	25771	Gauge (0-20,000 psi)
14	50488	Nipple
15	55297	Body
16	55304	Base
17	25700	Capscrew



GUNS, VALVES & FILTERS

UP TO 15,000 PSI (1000 BAR)



BYPASS VALVES

HAND ADJUSTABLE

A bypass valve diverts a portion of pump flow to a low-pressure outlet and is used on diesel and electric units. For diesel engines, it is used to prevent bogging the engine when using flows at the low end of the pump's capability. A bypass valve is required on electric units due to the non-adjustability of motor speed.

- Two minute field-replaceable cartridge design for minimal downtime
- Hand adjustment — no wrench needed
- Pump-mount model connects to fluid end manifold
- Base-mount model connects in-line downstream and includes a protective cage and a pressure gauge for remote adjustment
- All pressure-bearing components precision machined from stainless steel
- Pipe threaded (NPT) inlet and outlet connections



Pump-Mounted
Part No. 53920

REPLACEMENT CARTRIDGE



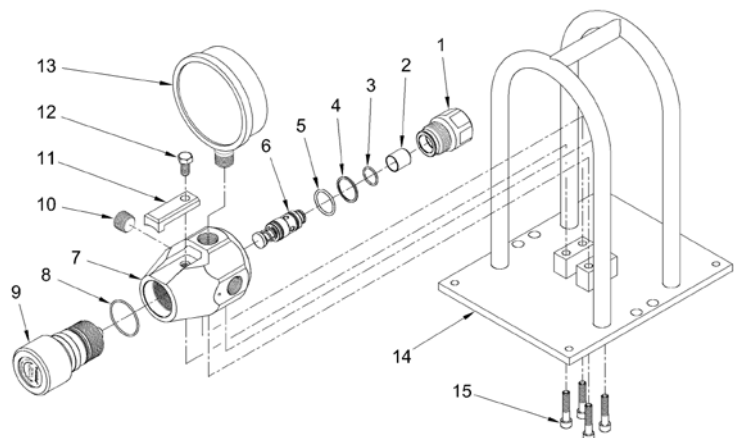
Base-Mounted
Part No. 52680

Part No.	Mounting Style	Pressure Gauge Included	Inlet & Outlet Connections*	Low Pressure Outlet Connection	Dimensions (H x W x D)		Weight		Max. Operating Pressure	
					in	mm	lb	kg	psi	bar
53920	Pump-Mount	No	1/2" NPT Fml	1/2" NPT Fml	3.2 x 3.3 x 7.9	80 x 84 x 200	11	5	15,000	1000
52680	Base-Mount	Yes	1/2" NPT Fml	1/2" NPT Fml	12.8 x 8.0 x 11.3	325 x 203 x 287	28	12	15,000	1000

* See details on all connection types beginning on page I-2.

Replacement Parts

Item	Part No.	Description
1	54077	Outlet Adapter
2	52201	Diffuser
3	26782	O-Ring
4	53912	Backup Ring
5	26522	O-Ring
6	50234	Cartridge
7	53859	Body
8	25603	O-Ring
9	52144	Adjuster
10	26155	Plug
11	50795	Locking Arm
12	25593	Capscrew
13	51126	Gauge (Base-Mounted Model)
14	52486	Base/Cage (Base-Mounted Model)
15	25700	Capscrew (Base-Mounted Model)



GUNS, VALVES & FILTERS

UP TO 15,000 PSI (1000 BAR)



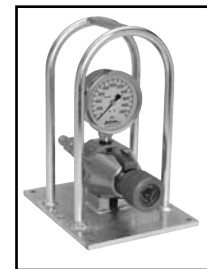
SHUT-IN REGULATOR VALVES HAND ADJUSTABLE

Required for use with shut-in systems on plunger pumps, the regulator valve maintains constant system pressure when operating one or more shut-in guns from a single pump. When a gun is disengaged, the regulator automatically adjusts to shift the excess flow to a low pressure outlet while maintaining system pressure.

- Two-minute field-replaceable cartridge design for minimal downtime
- Hand adjustment — no wrench needed
- Pump-mount model connects to fluid end manifold
- Base-mount model connects in-line downstream and includes a protective cage and a pressure gauge for remote adjustment
- All pressure-bearing components precision machined from stainless steel
- Two operating pressure ranges available. Switching between ranges requires only a cartridge changeout.
- Pipe threaded (NPT) inlet and outlet connections



Pump-Mounted
Part No's. 54238 & 54432



Base-Mounted
Part No's. 52690 & 53605

REPLACEMENT CARTRIDGE

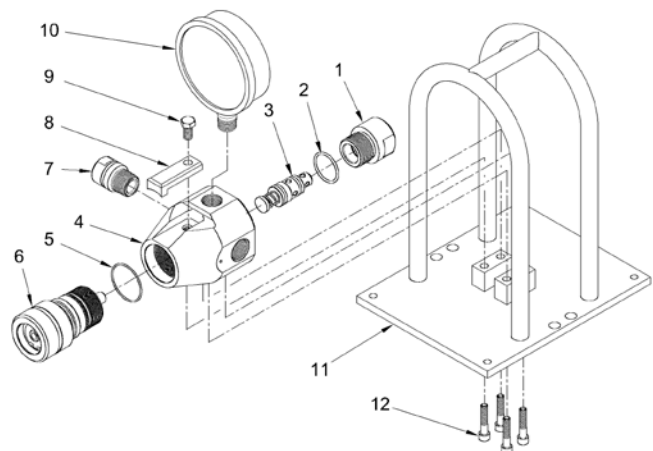


Part No.	Mounting Style	Inlet Connections (3)*	Low Pressure Outlet Connection	Dimensions (H x W x D)		Weight		Operating Pressure Range	
				in	mm	lb	kg	psi	bar
54238	Pump-Mount	3/4" NPT Fml	3/4" NPT Fml	3.2 x 3.3 x 7.9	80 x 84 x 200	11	5	8,000-15,000	550-1000
52690	Base-Mount	3/4" NPT Fml	3/4" NPT Fml	12.8 x 8.0 x 11.3	325 x 203 x 287	28	12	8,000-15,000	550-1000
54432	Pump-Mount	3/4" NPT Fml	3/4" NPT Fml	3.2 x 3.3 x 7.9	80 x 84 x 200	11	5	5,000-11,000	350-750
53605	Base-Mount	3/4" NPT Fml	3/4" NPT Fml	12.8 x 8.0 x 11.3	325 x 203 x 287	28	12	5,000-11,000	350-750

* See details on all connection types beginning on page I-2.

Replacement Parts

Item	Part No.	Description
1	52583	Outlet Adapter
2	25657	O-Ring
3	52695	Cartridge, 8,000-15,000 psi (550-1000 bar)
	53135	Cartridge, 5,000-11,000 psi (350-750 bar)
4	52572	Body
5	26919	O-Ring
6	52700	Adjustment Knob
7	26065	Reducing Bushing (Pump-Mounted Models)
8	50795	Locking Arm
9	25593	Capscrew
10	51126	Gauge (0-30,000 psi scale)
	25771	Gauge (0-20,000 psi scale)
11	52486	Base/Cage (Base-Mounted Models)
12	25700	Capscrew (Base-Mounted Models)
13	26115	Plug (Pump-Mounted Models)



Related Items

SHUT-IN HAND GUNS — See pages C-3 – C-4

SHUT-IN FOOT GUNS — See page C-8

GUNS, VALVES & FILTERS

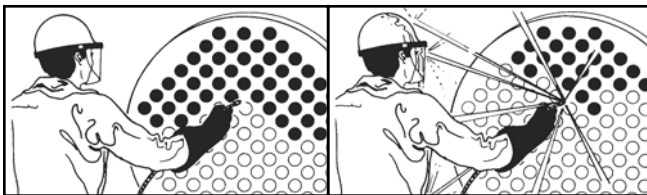
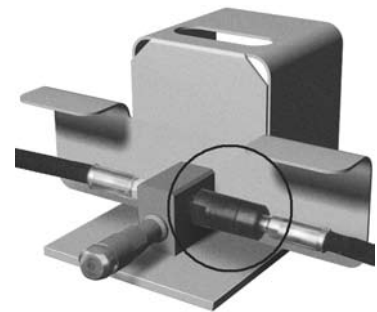
UP TO 15,000 PSI (1000 BAR)



NOZZLE SHUT-OFF VALVE NSOV

The Nozzle Shut-Off Valve (NSOV) is designed for use with dump style foot guns. The Nozzle Shut Off Valve completely stops all water flow to the cleaning nozzle in a waterblast operation while the foot valve is in its dump mode.

- Allows the operator to freely move the nozzle without impairment of vision caused by sprayback (shown below)
- Opens fully for unimpeded flow to the nozzle when blasting
- Mounts between lance and foot gun (shown at right)
- All pressure-bearing components precision machined from stainless steel



With NSOV Installed

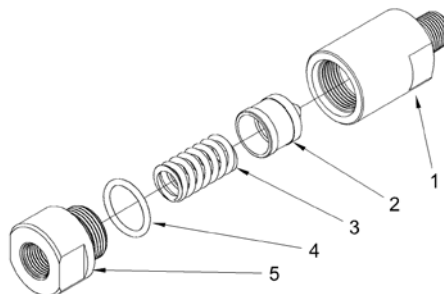
Without NSOV Installed

Part No.	Inlet Connection*	Outlet Connection*	Dimensions				Weight		Max. Operating Pressure	
			Length		Diameter		lb	kg	psi	bar
			in	mm	in	mm				
51642	1/2" NPT Male	1/2" NPT Fml	4.18	106	1.75	44.5	2	1	15,000	1000

* See details on all connection types beginning on page I-2.

Replacement Parts

Item	Part No.	Description
1	51643	Body
2	51645	Valve
3	26455	Spring
4	26314	O-Ring
5	51644	Outlet Adapter



Related Items

DURASAFE™ DUMP STYLE FOOT GUNS — See page C-7
STRAIN RELIEF HOSES — See page G-4

GUNS, VALVES & FILTERS

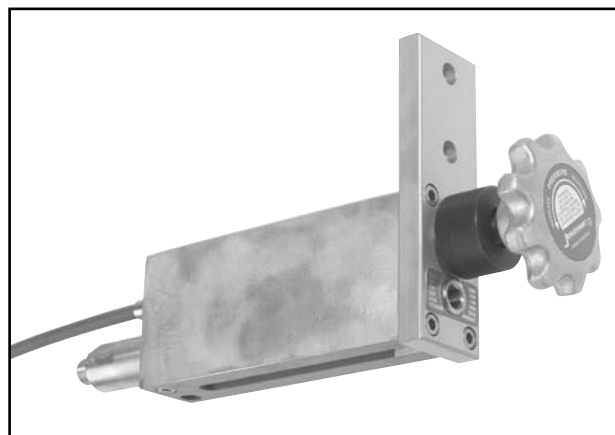
UP TO 15,000 PSI (1000 BAR)



HYDRO-THROTTLE MECHANICAL THROTTLE CONTROL

The Jetstream Mechanical Hydro-Throttle enables the operator to reduce the engine to idle speed and relieve the system of high pressure when the gun trigger is released — saving water and fuel and reducing wear on the engine and pump. When the gun is again engaged, the Hydro-Throttle increases the engine speed until the pump again reaches the set operating pressure.

- For use with dump systems on diesel waterblast units with mechanical controls. For electronically controlled engines, see the next page.
- Quick panel or bracket mount installation
- Easy knob adjustments under all operating conditions
- Flexible control cable for quick, easy routing and minimal drag
- Back-pressure adjustment screw compensates for excessive system back-pressure when control gun is disengaged
- Assemblies include control unit, cartridge and control cable to connect to engine throttle. Hydro-Throttle hose, sold below, is needed to connect control unit to pump.



REPLACEMENT CARTRIDGE

Replaceable cartridge for fast field service or conversion to another pressure range



Part No.	Control Cable Length		Connection Type* (Cartridge)	Control Unit Size (L x W x H)		Weight		Max. Operating Pressure	
	ft	m		in	mm	lb	kg	psi	bar
51900	2	0.6	1/4" NPT Male	11.7 x 1.75 x 5.6	297 x 44.5 x 142	4	1.8	15,000	1000
51900A	5	1.5							

* See details on all connection types beginning on page I-2.

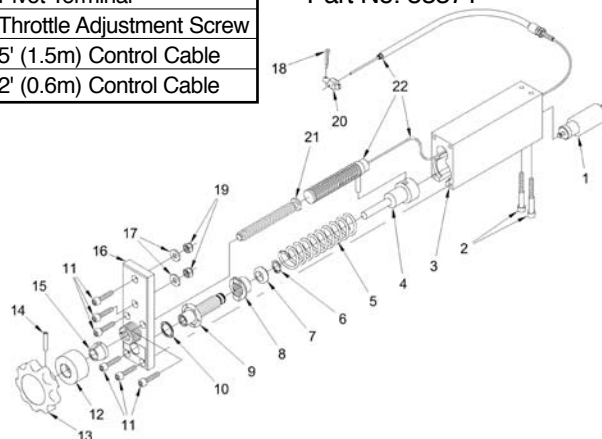
Replacement Parts

Item	Part No.	Description
1	51899	Cartridge
2-21	52894	Throttle Control Unit
2	26690	Capscrew
3	51877	Body
4	54293	Spring Retainer
5	26682	Return Spring
6	28274	Retaining Spring
7	54272	Adjuster Stop Ring
8	54269	Back-Pressure Adjustment Nut
9	54268	Back-Pressure Adjustment Screw
10	54271	Thrust Washer
11	26689	Capscrew
12	51887	Friction Adjustment Nut
13	51879	Hand Knob
14	26688	Pin
15	51888	Friction Ring
16	51908	Face Plate
17	25247	Washer

Item	Part No.	Description
18	26468	Cotter Pin
19	25314	Nut
20	26728	Pivot Terminal
21	51885	Throttle Adjustment Screw
22	51903A	5' (1.5m) Control Cable
	51903	2' (0.6m) Control Cable

Related Items

Hydro-Throttle Hose
6 ft (1.8 m)
1/2" NPT Male x 1/4" NPT
Fml
Part No. 53371



GUNS, VALVES & FILTERS

UP TO 15,000 PSI (1000 BAR)



HYDRO-THROTTLE ELECTRONIC THROTTLE CONTROL

The Jetstream Electronic Hydro-Throttle enables the operator to reduce the engine to idle speed and relieve the system of high pressure when the gun trigger is released — saving water and fuel and reducing wear on the engine and pump. When the gun is again engaged, the Hydro-Throttle senses the change in pressure and increases the engine speed to the previous set point.

- For use with dump systems on diesel waterblast units with electronic controls. For mechanically controlled engines, see the previous page.
- Mounts directly to the fluid end manifold
- Replaceable cartridge for fast field service or conversion to another pressure range
- Includes actuator assembly, cartridge and electrical plug to mount to engine cowling



GUNS, VALVES
& FILTERS

REPLACEMENT CARTRIDGE

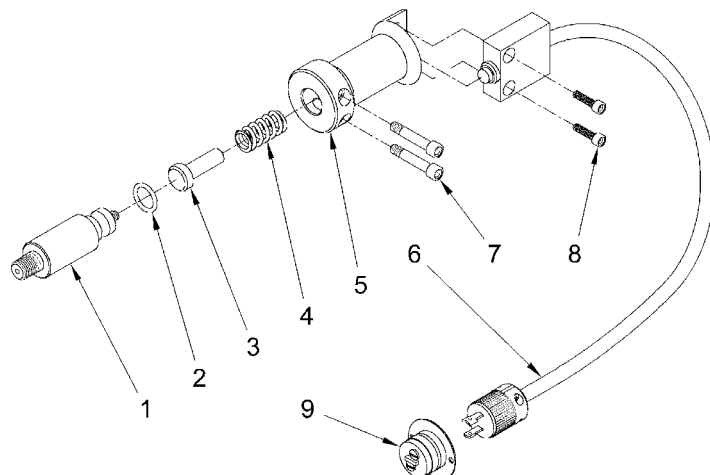


Part No.	Connection*	Diameter		Length (less cord)		Weight		Max. Operating Pressure	
		in	mm	in	mm	lb	kg	psi	bar
J55715	1/4" NPT Male	1.75	44.5	7.2	182	1.6	0.7	15,000	1000

* See details on all connection types beginning on page I-2.

Replacement Parts

Item	Part No.	Description
1	51899	Hydro-Throttle Cartridge
2	26426	O-Ring
3	53444	Plunger
4	25279	Spring
5	53443	Body
6	53446	Corded Switch
7	53447	Capscrew
8	27716	Capscrew
9	27494	Receptacle

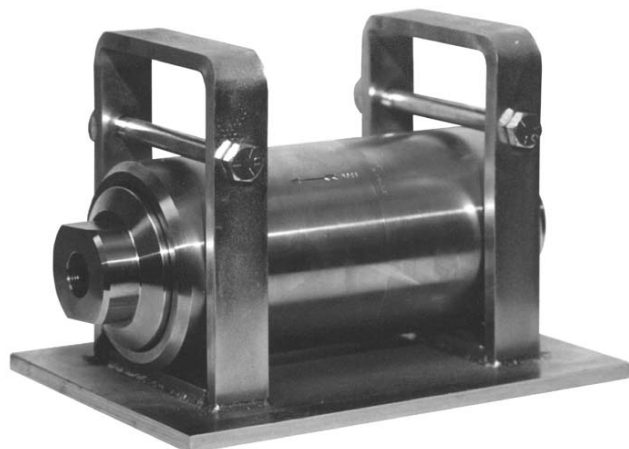


GUNS, VALVES & FILTERS

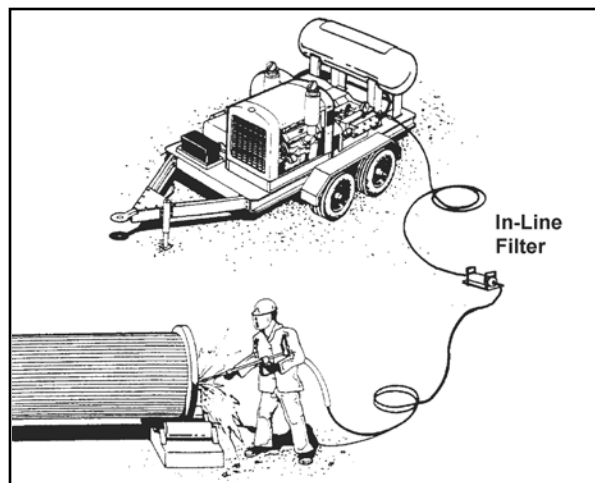
UP TO 15,000 PSI (1000 BAR)



HIGH PRESSURE IN-LINE FILTER



The High Pressure In-Line Water Filter is designed and built for durability and ease of use. It allows water to be filtered after the pump, providing maximum protection for control valves, spin nozzles, and other equipment that can be damaged by large particles in water.



- Quick and easy filter cartridge style replacement
- Base-mounted, permitting the filter to be mounted at the pump or downstream between hoses
- Pop-out internal relief valve protects the system from unsafe pressure caused by clogged filters. Resetting the relief valve simply requires pushing a reset button after the filter has been replaced.
- Stainless steel construction
- Filter element not included

REPLACEMENT FILTER ELEMENT

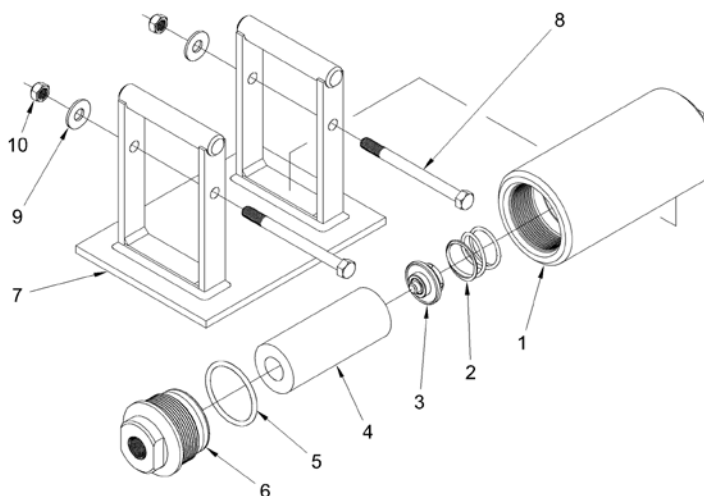


Part No.	Inlet Connection*	Outlet Connection*	Dimensions (L x W x H)		Weight		Maximum Flow		Max. Operating Pressure	
			in	mm	lb	kg	gpm	lpm	psi	bar
52710	1/2" NPT Fml	1/2" NPT Fml	11 x 8 x 9.5	279 x 203 x 241	46	21	40	150	15,000	1000

* See details on all connection types beginning on page I-2.

Replacement Parts

Item	Part No.	Description
1	52587	Body
2	27415	Spring
3	52705	Relief Valve
4	26931	5 Micron Filter Element
	26932	10 Micron Filter Element
	26933	25 Micron Filter Element
5	27418	O-Ring
6	52586	Cap
7	52599	Base
8	27406	Capscrew
9	26798	Washer
10	25410	Nut



GUNS, VALVES & FILTERS

UP TO 15,000 PSI (1000 BAR)



FILTERS

LOW PRESSURE

Provide critical protection to waterblast systems by extending valve life, preventing overpressurization caused by plugged nozzles, and protecting other system components from damage by large particles in water supply.

- Available in two sizes to meet a wide range of needs
- Stainless steel housings
- Heavy-duty stainless steel baskets
- Filter bags from 5 to 75 microns
- Accessory ports for pressure gauges and drain valves
- Stand included
- Filter bags sold separately

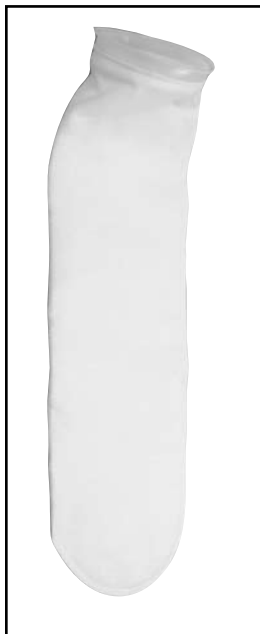


GUNS, VALVES
& FILTERS

Part No.	Inlet & Outlet Connections	Maximum Flow		Dimensions				Weight		Max. Operating Pressure	
				Diameter		Height*					
		gpm	lpm	in	mm	in	mm	lb	kg	psi	bar
J70611	2" NPT Fml	200	750	8.5	216	36	910	40	18	150	10
J70610	1-1/2" NPT Fml	40	150	4.0	102	20	510	7.5	3.4	150	10

* See details on all connection types beginning on page I-2.

FILTER BAGS



Filter Style	Bag Diameter		Bag Length		Nominal Filtration (micron)				
	in	mm	in	mm	5	10	25	50	75
40 gpm	4	100	14	360	27688	26765	26766	27497	—
200 gpm	7	180	32	810	28806	26916	25117	25866	25118
Guardian	7	180	42	1070	71254	J56204	J70917	—	—



Guardian Filtration System

HOSES & LANCES

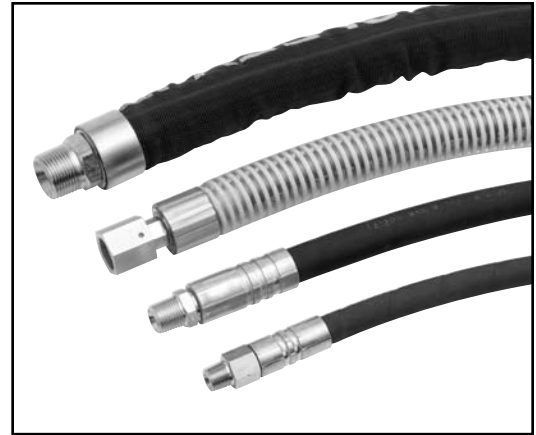
UP TO 15,000 PSI (1000 BAR)



RUBBER WATERBLAST HOSES

These high pressure hose assemblies combine rugged construction, dependability and safe performance.

- Designed specifically for waterblast applications
- Lightweight and flexible
- Available in sizes from 1/4" to 1" (6 mm to 25 mm)
- Standard hoses are uncovered with plated steel male pipe thread end fittings in lengths of 25 or 50 ft
- For other lengths, fittings or cover options, use the custom order instructions below and on page D-2
- See pages D-12 – D-13 for pressure drop charts



Standard Assemblies

Nominal Hose I.D.		Part No.	Length		End Fittings		Working Pressure**		Minimum Burst Pressure**		Bend Radius		Cover
in	mm		ft	m	Connection*	Material	psi	bar	psi	bar	in	mm	
1"	25	53235-0500707	50	15.2	1" NPT Male	Plated Steel	10,000	700	25,000	1750	13.4	340	None
		53235-0250707	25	7.6	1" NPT Male	Plated Steel	10,000	700	25,000	1750	13.4	340	None
3/4"	19	51118-0500606	50	15.2	3/4" NPT Male	Plated Steel	10,000	700	25,000	1750	10.0	250	None
		51118-0250606	25	7.6	3/4" NPT Male	Plated Steel	10,000	700	25,000	1750	10.0	250	None
1/2"	13	52241-0500505	50	15.2	1/2" NPT Male	Plated Steel	15,000	1000	37,500	2500	9.0	230	None
		52241-0250505	25	7.6	1/2" NPT Male	Plated Steel	15,000	1000	37,500	2500	9.0	230	None
		25513-0500505	50	15.2	1/2" NPT Male	Plated Steel	10,000	700	25,000	1750	8.7	220	None
		25513-0250505	25	7.6	1/2" NPT Male	Plated Steel	10,000	700	25,000	1750	8.7	220	None
3/8"	10	52178-0500404	50	15.2	3/8" NPT Male	Plated Steel	15,000	1000	37,500	2500	9.0	230	None
		52178-0250404	25	7.6	3/8" NPT Male	Plated Steel	15,000	1000	37,500	2500	9.0	230	None
		25576-0500404	50	15.2	3/8" NPT Male	Plated Steel	10,000	700	25,000	1750	7.0	180	None
		25576-0250404	25	7.6	3/8" NPT Male	Plated Steel	10,000	700	25,000	1750	7.0	180	None
1/4"	6	25914-0500303	50	15.2	1/4" NPT Male	Plated Steel	10,000	700	25,000	1750	5.9	150	None
		25914-0250303	25	7.6	1/4" NPT Male	Plated Steel	10,000	700	25,000	1750	5.9	150	None

* See details on all connection types beginning on page I-2.

** Maximum working pressure and minimum burst pressure may be greater than specified.

Ordering Custom Assemblies

Use the part numbering system below and charts on the following page to order hoses with other end fittings, fitting material, hose lengths, or covers:

XXXXX - LLL AA BB C

SPECIFY HOSE SERIES (XXXXX)

See Hose Series chart on page D-2

HYPHEN

Between series and length

SPECIFY LENGTH IN FEET (LLL)

Example: "050" for a 50 ft long hose

SPECIFY END FITTINGS BY CODE (AA & BB)

See End Fittings charts on page D-2. For a hose requiring two different end fittings, codes must be listed in numerical order.

SPECIFY COVER OPTION BY CODE (C)

See cover descriptions and codes on page D-2. Leave blank if no additional cover is desired.

Related Items

THERMOPLASTIC HOSES —

See page D-3

HOSE CHECKS — See page G-4

SAFETY SHROUDS & WHIP

HOSES — See page G-3

FLEX LANCE STRAIN RELIEF

HOSES — See page G-4

HOSES & LANCES

UP TO 15,000 PSI (1000 BAR)



RUBBER WATERBLAST HOSES CUSTOM ORDER

Use the information on this page to build part numbers for custom rubber hoses using the part numbering system described on the previous page.

Hose Series

Nominal Hose I.D.		Series	Maximum Working Pressure*		Minimum Burst Pressure*		Bend Radius		Weight	
in	mm		psi	bar	psi	bar	in	mm	lb/ft	kg/m
1"	25	53235	10,000	700	25,000	1750	13.4	340	1.94	2.89
3/4"	19	51118	10,000	700	25,000	1750	10.0	250	1.16	1.73
1/2"	13	52241	15,000	1000	37,500	2500	9.0	230	.76	1.13
1/2"	13	25513	10,000	700	25,000	1750	8.7	220	.61	0.91
3/8"	10	52178	10,000	700	25,000	1750	7.0	180	.50	0.74
3/8"	10	25576	15,000	1000	37,500	2500	9.0	230	.55	0.82
1/4"	6	25914	10,000	700	25,000	1750	5.9	150	.40	0.60

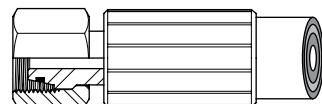
* Maximum working pressure and minimum burst pressure may be greater than specified.

End Fittings

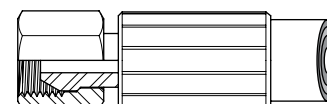
MALE PIPE THREADS (NPT MALE)



METRIC FEMALE



BSP FEMALE



Hose I.D.		End Fitting Connection*	Fitting Code**	
in	mm		SS	PS
1"	25	1" NPT Male	14	07
3/4"	19	3/4" NPT Male	13	06
1/2"	13	1/2" NPT Male	12	05
3/8"	10	3/8" NPT Male	11	04
1/4"	6	1/4" NPT Male	10	03

* See details on all connection types beginning on page I-2.

** SS: Stainless steel; PS: Plated carbon steel

Hose I.D.		End Fitting Connection*	Fitting Code**	
in	mm		SS	PS
1"	25	M42 x 2.0 Female	-	48
3/4"	19	M36 x 2.0 Female	-	47
1/2"	13	M24 x 1.5 Female	-	46
3/8"	10	M22 x 1.5 Female	-	45

* See details on all connection types beginning on page I-2.

** SS: Stainless steel; PS: Plated carbon steel

Hose I.D.		End Fitting Connection*	Fitting Code**	
in	mm		SS	PS
1/2"	13	1/2" BSP Female	-	61
3/8"	10	3/8" BSP Female	-	60

* See details on all connection types beginning on page I-2.

** SS: Stainless steel; PS: Plated carbon steel

Cover Options

No Cover

(Omit Cover Option Code)



Cordura Cover

(Cover Option Code: 4)

Heavy-duty, braided nylon cover protects hose from abrasion damage caused by vibration or movement along a rough surface.



Abrasion Cover

(Cover Option Code: 1)

Constructed of clear PVC and reinforced with a rigid spiral coil, the Abrasion Cover protects the hose from external damage caused by vibration or movement along rough or uneven surfaces.

HOSES & LANCES

UP TO 15,000 PSI (1000 BAR)



THERMOPLASTIC HOSES

These premium hoses provide the most durable and reliable means of connecting system components.

- Constructed of plastic core reinforced with high tensile steel wire and enclosed in a tough, flexible thermoplastic jacket
- Smooth core minimizes pressure loss and offers the maximum resistance to damage caused by aging, moisture absorption and changing environmental factors
- Available with plated or stainless steel end fittings
- Heavy-duty vinyl abrasion cover prevents damage caused by vibration and movement of hose on rough or uneven surfaces
- See pages D-13 – D-15 for pressure drop graphs
- For special lengths, end fittings, or cover options, see custom order instructions on pages D-5 – D-6



Standard Assemblies

Nominal I.D.	Part No.	Inside Diameter		Length		End Fittings		Working Pressure**		Minimum Burst Pressure**		Bend Radius		Cover
		in	mm	ft	mm	Connection*	Material	psi	bar	psi	bar	in	mm	
3/4"	29313-0500606	.74	18.8	50	15.2	3/4" NPT Male	Plated Steel	15,000	1000	37,500	2500	9.8	250	None
	29313-0250606	.74	18.8	25	7.6	3/4" NPT Male	Plated Steel	15,000	1000	37,500	2500	9.8	250	None
	29313-0501313	.74	18.8	50	15.2	3/4" NPT Male	Stainless Steel	15,000	1000	37,500	2500	9.8	250	None
	29313-0251313	.74	18.8	25	7.6	3/4" NPT Male	Stainless Steel	15,000	1000	37,500	2500	9.8	250	None
1/2"	28524-0500505	.50	12.8	50	15.2	1/2" NPT Male	Plated Steel	15,000	1000	37,500	2500	5.6	140	None
	28524-0250505	.50	12.8	25	7.6	1/2" NPT Male	Plated Steel	15,000	1000	37,500	2500	5.6	140	None
	28524-0501212	.50	12.8	50	15.2	1/2" NPT Male	Stainless Steel	15,000	1000	37,500	2500	5.6	140	None
	28524-0251212	.50	12.8	25	7.6	1/2" NPT Male	Stainless Steel	15,000	1000	37,500	2500	5.6	140	None
5/16"	28673-0500404	.32	8.1	50	15.2	3/8" NPT Male	Plated Steel	15,000	1000	37,500	2500	4.3	110	None
	28673-0250404	.32	8.1	25	7.6	3/8" NPT Male	Plated Steel	15,000	1000	37,500	2500	4.3	110	None
1/4"	28490-0500303	.25	6.3	50	15.2	1/4" NPT Male	Plated Steel	15,000	1000	37,500	2500	4.3	110	None
	28490-0250303	.25	6.3	25	7.6	1/4" NPT Male	Plated Steel	15,000	1000	37,500	2500	4.3	110	None

* See details on all connection types beginning on page I-2.

** Maximum working pressure and minimum burst pressure may be greater than specified.

Related Items

RUBBER HOSES — See pages D-1 – D-2

HOSE CHECKS — See page G-4

SAFETY SHROUDS & WHIP HOSES — See page G-3

FLEX LANCE STRAIN RELIEF HOSES — See page G-4

HOSES & LANCES

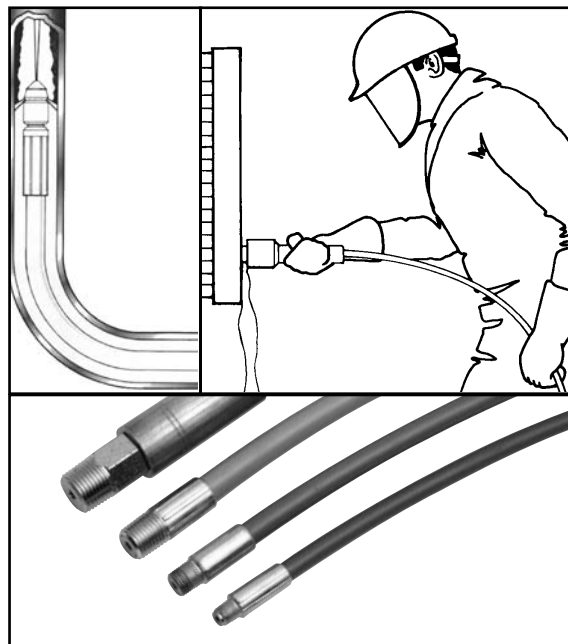
UP TO 15,000 PSI (1000 BAR)



THERMOPLASTIC FLEX LANCES

Flex lances are uncovered hoses used for the cleaning of small diameter tubes such as those found in heat exchangers, condensers and boilers.

- Small minimum bend radius allows easy passage through bends
- Constructed of plastic core reinforced with high tensile steel wire and enclosed in a tough, flexible thermoplastic jacket
- Smooth plastic core minimizes pressure loss and offers the maximum resistance to damage caused by aging, moisture absorption and changing environmental factors
- Standard flex lances include plated steel end fittings. Stainless steel fittings available upon request. See pages D-5 – D-6.
- See pages D-13 – D-15 for pressure drop graphs
- Standard lengths are 25, 35 and 50 feet. Other lengths or end fitting combinations can be ordered using the instructions on pages D-5 – D-6



HOSES &
LANCES

Standard Assemblies

Nominal I.D.	Part No.	Inside Diameter		Length		Max. Outside Diameter*		End Fittings		Max. Working Pressure***		Bend Radius	
		in	mm	ft	mm	in	mm	Connection**	Material	psi	bar	in	mm
5/16"	28673-0500404	.32	8.0	50	15.2	.86	21.8	3/8" NPT Male	Plated Steel	15,000	1000	4.3	110
	28673-0350404	.32	8.0	35	10.7	.86	21.8	3/8" NPT Male	Plated Steel	15,000	1000	4.3	110
	28673-0250404	.32	8.0	25	7.6	.86	21.8	3/8" NPT Male	Plated Steel	15,000	1000	4.3	110
1/4"	28490-0500303	.25	6.3	50	15.2	.57	14.5	1/4" NPT Male	Plated Steel	15,000	1000	4.3	110
	28490-0350303	.25	6.3	35	10.7	.57	14.5	1/4" NPT Male	Plated Steel	15,000	1000	4.3	110
	28490-0250303	.25	6.3	25	7.6	.57	14.5	1/4" NPT Male	Plated Steel	15,000	1000	4.3	110
	26108-0500303	.25	6.3	50	15.2	.53	13.5	1/4" NPT Male	Plated Steel	12,500	850	4.3	110
	26108-0350303	.25	6.3	35	10.7	.53	13.5	1/4" NPT Male	Plated Steel	12,500	850	4.3	110
	26108-0250303	.25	6.3	25	7.6	.53	13.5	1/4" NPT Male	Plated Steel	12,500	850	4.3	110
3/16"	26106-0500202	.20	5.0	50	15.2	.47	11.9	1/8" NPT Male	Plated Steel	15,000	1000	3.8	95
	26106-0350202	.20	5.0	35	10.7	.47	11.9	1/8" NPT Male	Plated Steel	15,000	1000	3.8	95
	26106-0250202	.20	5.0	25	7.6	.47	11.9	1/8" NPT Male	Plated Steel	15,000	1000	3.8	95
5/32"	26104-0500101	.16	4.0	50	15.2	.39	9.9	1/16" NPT Male	Plated Steel	15,000	1000	3.0	75
	26104-0350101	.16	4.0	35	10.7	.39	9.9	1/16" NPT Male	Plated Steel	15,000	1000	3.0	75
	26104-0250101	.16	4.0	25	7.6	.39	9.9	1/16" NPT Male	Plated Steel	15,000	1000	3.0	75

* Outside diameter of end fitting sleeve.

** See details on end fittings for these assemblies on page D-6 and specifications for all connection types beginning on page I-2.

*** Maximum working pressure may be greater than specified.

Related Items

TUBE CLEANING NOZZLES — See pages E-19 – E-27

STEEL BRAIDED FLEX LANCES — See page E-7

DURASAFE™ FOOT CONTROL GUNS — See pages C-7 – C-8

STINGERS (NIPPLES — PIPE THREAD (NPT)) — See pages F-8

FLEX LANCE STRAIN RELIEF HOSES — See pages G-4

FLEX LANCE SAFETY GRIP — See page G-5

HOSES & LANCES

UP TO 15,000 PSI (1000 BAR)

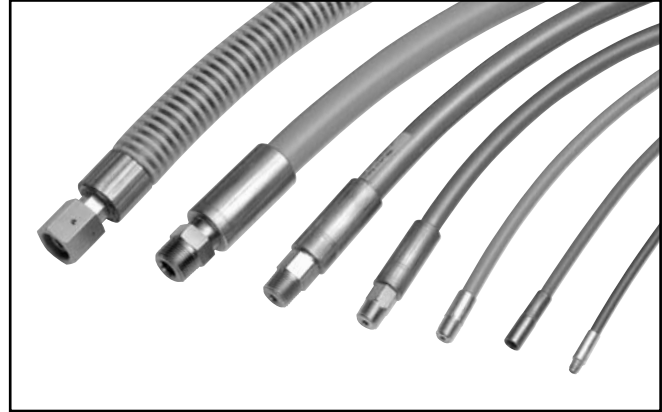


THERMOPLASTIC HOSES & FLEX LANCES

CUSTOM ORDER

Thermoplastic hoses and flex lances are available in custom lengths or with special end fitting combinations or covers. Common lengths and configurations are available on the two preceding pages.

- Constructed of plastic core reinforced with high tensile steel wire and enclosed in a tough, flexible thermoplastic jacket
- Smooth plastic core minimizes pressure loss and offers the maximum resistance to damage caused by aging, moisture absorption, and changing environmental factors
- See pages D-13 – D-15 for pressure drop graphs



Nominal I.D.		Series	Jacket Color	Inside Diameter		Outside Diameter*		Maximum Working Pressure**		Minimum Burst Pressure**		Bend Radius		Weight	
in	mm			in	mm	in	mm	psi	bar	psi	bar	in	mm	lb/ft	kg/m
3/4	20	29313	Gray	.74	18.8	1.17	29.6	15,000	1000	37,500	2500	9.8	250	.91	1.35
1/2	13	28524	Silver	.50	12.8	.87	22.2	15,000	1000	37,500	2500	5.6	140	.40	0.60
1/2	13	28481	Green	.50	12.8	.76	19.3	10,000	700	25,000	1720	7.9	200	.29	0.44
5/16	8	28673	Gray	.32	8.0	.63	16.0	15,000	1000	37,500	2500	4.3	110	.26	0.39
5/16	8	27560	Blue	.32	8.0	.53	13.3	11,600	800	29,000	2000	5.1	130	.13	0.20
1/4	6	28490	Green	.25	6.3	.49	12.5	15,000	1000	37,500	2500	4.3	110	.19	0.28
1/4	6	26108	Green	.25	6.3	.46	11.5	12,500	850	31,250	2125	4.3	110	.12	0.19
3/16	5	26106	Blue	.20	5.0	.37	9.4	15,000	1000	37,500	2500	3.8	95	.08	0.13
5/32	4	26104	Red	.16	4.0	.32	8.0	15,000	1000	37,500	2500	3.0	75	.07	0.11
1/8	3	28596	Green	.13	3.4	.27	6.9	15,000	1000	36,200	2500	2.4	60	.05	0.07

* Outside diameter of hose material (end fitting diameter will be greater).

** Maximum working pressure and minimum burst pressure may be greater than specified.

Ordering Custom Assemblies

Use the part numbering system below and the information on this page and the next to order thermoplastic hoses and flex lances with other end fittings, fitting material, hose lengths, or covers:

XXXXX - LLL AA BB C

SPECIFY HOSE SERIES (XXXXX)

See Hose Series chart above

HYPHEN

Between series and length

SPECIFY LENGTH IN FEET (LLL)

Example: "050" for a 50 ft long hose

SPECIFY END FITTINGS BY CODE (AA & BB)

See End Fittings charts on page D-6. For a hose requiring two different end fittings, codes must be listed in numerical order.

SPECIFY COVER OPTION BY CODE (C)

See cover descriptions and codes on page at right.
Leave blank if no additional cover is desired.

Cover Options

No Cover

(Omit Cover Option Code)

Abrasion Cover

(Cover Option Code: 1)

Constructed of clear PVC and reinforced with a rigid spiral coil, the Abrasion Cover protects the hose from external damage caused by vibration or movement along rough or uneven surfaces.



Burst Shield Cover

(Cover Option Code: 2)

Constructed of steel wire reinforced heavy-duty synthetic rubber, the Burst Shield Cover protects the user from hose failure while preventing external damage to hose.



HOSES & LANCES

UP TO 15,000 PSI (1000 BAR)



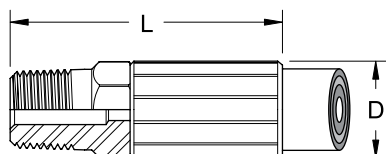
THERMOPLASTIC HOSES & FLEX LANCES

CUSTOM ORDER

Use the information on this page to select the connections desired for custom thermoplastic hoses and flex lances.

End Fittings

MALE PIPE THREADS (NPT Male)

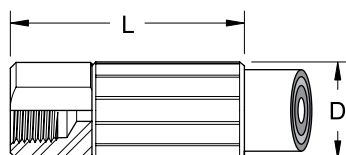


Hose I.D.		Series	End Fitting Connection*	Fitting Length (L)		Fitting O.D. (D)		Fitting Code**	
in	mm			in	mm	in	mm	SS	PS
3/4	20	29313	1" NPT Male	4.70	119.4	1.45	36.8	-	07
			3/4" NPT Male	4.50	114.3	1.45	36.8	13	06
1/2	13	28524	1/2" NPT Male	3.60	91.4	1.14	29.0	12	05
1/2	13	28481	1/2" NPT Male	3.35	85.1	1.02	25.9	-	05
5/16	8	28673	3/8" NPT Male	2.90	73.7	.86	21.8	-	04
			1/4" NPT Male	2.90	73.7	.86	21.8	-	03
5/16	8	27560	3/8" NPT Male	1.60	40.6	.69	17.5	-	04
			1/4" NPT Male	1.57	39.9	.69	17.5	-	03
1/4	6	28490	1/4" NPT Male	1.39	35.3	.57	14.5	-	03
			1/8" NPT Male	2.21	56.1	.57	14.5	-	02
1/4	6	26108	1/4" NPT Male	1.40	35.6	.53	13.5	-	03
			1/8" NPT Male	2.25	57.2	.55	14.0	-	02
3/16	5	26106	1/4" NPT Male	2.43	61.7	.51	13.0	-	03
			1/8" NPT Male	1.30	33.0	.47	11.9	09	02
5/32	4	26104	1/8" NPT Male	1.20	30.5	.39	9.9	-	02
			1/16" NPT Male	1.20	30.5	.39	9.9	-	01
1/8	3	28596	1/8" NPT Male	1.96	49.8	.55	14.0	-	02
			1/16" NPT Male	1.17	29.7	.36	9.1	-	01

* See details on all connection types beginning on page I-2.

** SS: Stainless steel; PS: Plated carbon steel

FEMALE PIPE THREADS (NPT Fml)

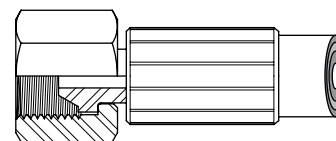


Hose I.D.		Series	End Fitting Connection*	Fitting Length (L)		Fitting O.D. (D)		Fitting Code**	
in	mm			in	mm	in	mm	SS	PS
1/4	6	28490	1/4" NPT Fml	2.70	68.6	.85	21.6	20	17
1/4	6	26108	1/4" NPT Fml	2.70	68.6	.55	14.0	20	17
3/16	5	26106	1/8" NPT Fml	1.70	43.2	.47	11.9	-	16
5/32	4	26104	1/16" NPT Fml	1.58	40.1	.39	9.9	-	15

* See details on all connection types beginning on page I-2.

** SS: Stainless steel; PS: Plated carbon steel

TYPE M FEMALE

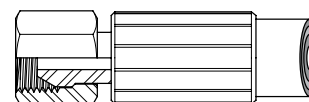


Hose I.D.		Series	End Fitting Connection*	Fitting Code**	
in	mm			SS	PS
3/4	20	29313	1-5/16" Type M Female	44	-
1/2	13	28524	1" Type M Female	42	-
1/2	13	28481	1" Type M Female	42	-
5/16	8	28673	3/4" Type M Female	40	-
5/16	8	27560	3/4" Type M Female	40	-
1/4	6	26108	9/16" Type M Female	39	-
1/4	6	28490	9/16" Type M Female	39	-
3/16	5	26106	9/16" Type M Female	39	-
5/32	4	26104	9/16" Type M Female	39	-
1/8	3	28596	9/16" Type M Female	39	-

* See details on all connection types beginning on page I-2.

** SS: Stainless steel; PS: Plated carbon steel

BSP FEMALE



Hose I.D.		Series	End Fitting Connection*	Fitting Code**	
in	mm			SS	PS
1/2	13	28524	1/2" BSP Female	-	61
1/2	13	28481	1/2" BSP Female	-	61
5/16	8	28673	3/8" BSP Female	-	60
5/16	8	27560	3/8" BSP Female	-	60
1/4	6	28490	1/4" BSP Female	-	59
1/4	6	26108	1/4" BSP Female	-	59
3/16	5	26106	1/4" BSP Female	-	59
5/32	4	26104	1/4" BSP Female	-	59

* See details on all connection types beginning on page I-2.

** SS: Stainless steel; PS: Plated carbon steel

METRIC FEMALE



Hose I.D.		Series	End Fitting Connection*	Fitting Code**	
in	mm			SS	PS
3/4	20	29313	M36 x 2.0 Female	-	47
1/2	13	28524	M24 x 1.5 Female	50	46
1/2	13	28481	M24 x 1.5 Female	-	46
5/16	8	28673	M24 x 1.5 Female	-	46

* See details on all connection types beginning on page I-2.

** SS: Stainless steel; PS: Plated carbon steel

HOSES &
LANCES

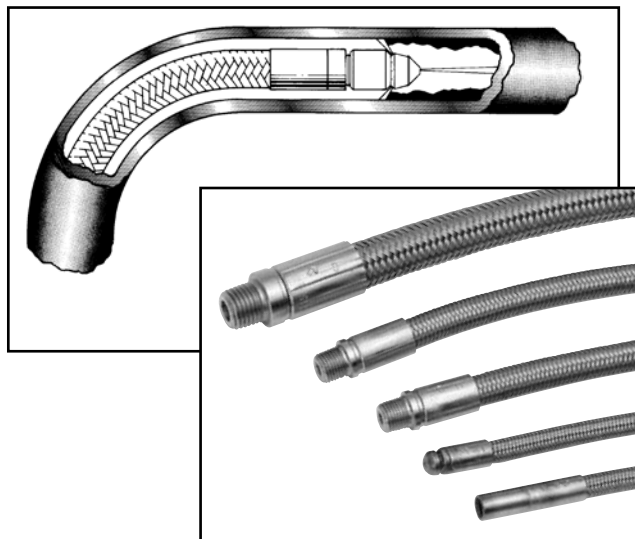
HOSES & LANCES

UP TO 15,000 PSI (1000 BAR)



STAINLESS STEEL BRAIDED FLEX LANCES

- Abrasion resistant, braided stainless steel cover
- Teflon® core ensures minimal pressure loss
- Small minimum bend radius allows easy passage through elbows, U-tubes and other sharp bends
- Stainless steel braid-anchored end fittings
- See pages D-15 – D-16 for pressure drop graphs
- Available in 25' and 50' lengths (7.6 m and 15.2 m)
- See dimensions for all end fittings and nozzle flow information for Mini-Mole nozzles on the following page



Nominal I.D.	Part No.	Inside Diameter		Length		End Fitting Diameter*		End Fittings**		Maximum Operating Pressure		Min. Bend Radius	
		in	mm	ft	mm	in	mm	Inlet End	Nozzle End	psi	bar	in	mm
5/16"	25571-50	.300	7.6	50	15.2	.721	18.31	1/4" NPT Male	1/4" NPT Male	8,000	550	5.0	125
	25571-25	.300	7.6	25	7.6	.721	18.31	1/4" NPT Male	1/4" NPT Male	8,000	550	5.0	125
1/4"	25570-50	.229	5.8	50	15.2	.575	14.61	1/8" NPT Male	1/8" NPT Male	10,000	700	3.0	75
	25570-25	.229	5.8	25	7.6	.575	14.61	1/8" NPT Male	1/8" NPT Male	10,000	700	3.0	75
	50752-50	.229	5.8	50	15.2	.565	14.35	1/8" NPT Male	5/16" UNEF Male	10,000	700	3.0	75
	50752-25	.229	5.8	25	7.6	.565	14.35	1/8" NPT Male	5/16" UNEF Male	10,000	700	3.0	75
1/4"	25568-50	.229	5.8	50	15.2	.500	12.70	1/8" NPT Male	1/8" NPT Male	8,000	550	3.0	75
	25568-25	.229	5.8	25	7.6	.500	12.70	1/8" NPT Male	1/8" NPT Male	8,000	550	3.0	75
	50673-50	.229	5.8	50	15.2	.500	12.70	1/8" NPT Male	5/16" UNEF Male	8,000	550	3.0	75
	50673-25	.229	5.8	25	7.6	.500	12.70	1/8" NPT Male	5/16" UNEF Male	8,000	550	3.0	75
1/8"	50559-50	.125	3.2	50	15.2	.340	8.64	1/16" NPT Male	1/16" NPT Male	8,000	550	2.0	50
	50559-25	.125	3.2	25	7.6	.340	8.64	1/16" NPT Male	1/16" NPT Male	8,000	550	2.0	50
	51162-50	.125	3.2	50	15.2	.325	8.26	1/16" NPT Male	1/4" UNEF Female	8,000	550	2.0	50
	51162-25	.125	3.2	25	7.6	.325	8.26	1/16" NPT Male	1/4" UNEF Female	8,000	550	2.0	50
	51498-50	.125	3.2	50	15.2	.335	8.51	1/16" NPT Male	Mini-Mole	8,000	550	2.0	50
	51498-25	.125	3.2	25	7.6	.335	8.51	1/16" NPT Male	Mini-Mole	8,000	550	2.0	50

* Outside diameter of end fitting sleeve.

** See end fitting dimensions on page D-8 and specifications for all connection types beginning on page I-2.

Related Items

TUBE CLEANING NOZZLES — See pages E-19 – E-29

THERMOPLASTIC FLEX LANCES — See page D-4

DURASAFE™ FOOT CONTROL GUNS — See pages C-7 – C-8

STINGERS (NIPPLES — PIPE THREAD (NPT)) — See pages F-8

FLEX LANCE STRAIN RELIEF HOSES — See pages G-4

FLEX LANCE SAFETY GRIP — See page G-5

HOSES & LANCES

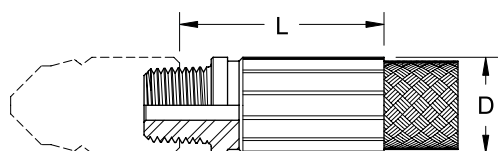
UP TO 15,000 PSI (1000 BAR)



STAINLESS STEEL BRAIDED FLEX LANCES END FITTINGS

NPT MALE

For use with female pipe threaded tube cleaning nozzles (see pages E-19 to E-22 and E-24 to E-27).



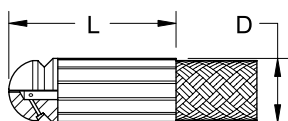
Hose I.D.	Series	End Fitting Connection*	Fitting Length** (L)		Fitting O.D. (D)	
			in	mm	in	mm
5/16"	25571	1/4" NPT Male	1.48	37.5	.721	18.31
1/4"	25570	1/8" NPT Male	1.25	31.8	.575	14.61
1/4"	25568	1/8" NPT Male	1.10	27.9	.500	12.70
1/8"	50559	1/16" NPT Male	.97	24.7	.340	8.64

* See details on all connection types beginning on page I-2.

** Add length of nozzle to "L" dimension to determine total rigid length.

MINI-MOLE

- Special end fitting with permanently attached nozzle
- Provides the shortest possible rigid length at the end of the lance to allow navigation through very sharp bends
- One standard nozzle pattern available
- Two standard flow ratings available, one for each flex lance length. See nozzle flow chart below.
- Contact a Jetstream sales representative for custom lengths, patterns or flow rates



Hose I.D.	Series	Fitting Length** (L)		Fitting O.D. (D)	
		in	mm	in	mm
1/8"	51498	.87	22.1	.335	8.51

MACHINE SCREW THREAD FEMALE

For use with MS2 nozzles (see page E-28).



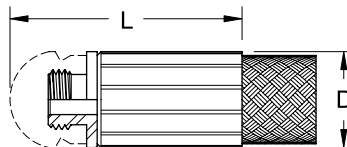
Hose I.D.	Series	End Fitting Connection*	Rigid Length** (L)		Fitting O.D. (D)		Nozzle Type/Size
			in	mm	in	mm	
1/8"	51162	1/4" UNF Female	2.09	52.1	.325	8.26	MS2

* See details on all connection types beginning on page I-2.

** Combined length of nozzle and end fitting.

MACHINE SCREW THREAD MALE

For use with Series C nozzles (see page E-29).

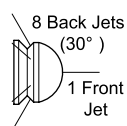


Hose I.D.	Series	End Fitting Connection*	Rigid Length** (L)		Fitting O.D. (D)		Nozzle Type/Size
			in	mm	in	mm	
1/4"	50752	5/16" UNEF Male	1.34	34.04	.565	14.35	C2
1/4"	50673	5/16" UNEF Male	1.38	34.93	.500	12.70	C1

* See details on all connection types beginning on page I-2.

** Combined length of nozzle and end fitting.

MINI-MOLE NOZZLE FLOW



Lance Length		Flow (gpm) at specified pressures (psi)								Flow (lpm) at specified pressures (bar)							
ft	m	3,000	4,000	5,000	6,000	7,000	8,000	200	250	300	350	400	450	500	550		
25'	15.2	2.2	2.5	2.8	3.1	3.3	3.5	8.1	9.0	9.9	10.7	11.4	12.1	12.8	13.4		
50'	7.6	1.6	1.9	2.1	2.3	2.5	2.7	6.1	6.8	7.5	8.1	8.7	9.2	9.7	10.2		

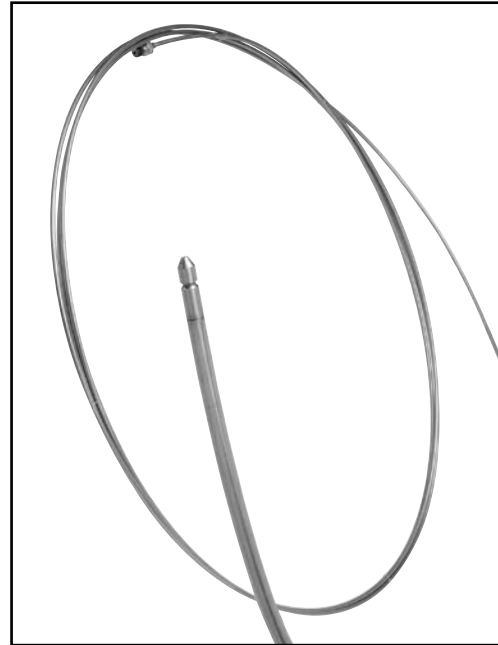
HOSES & LANCES

UP TO 15,000 PSI (1000 BAR)



STEELFLEX™ LANCES

- Smallest outside diameters of any commercially available lances
- Special spring temper stainless steel can be used as either flex or rigid lance in very small tubes
- Integral nozzle and inlet fitting
- High strength material permits large inside to outside diameter
- Unlike normal rigid lances, the flexibility of SteelFlex permits use in confined space applications
- Two sizes available in lengths up to 50 ft (15 m)
- Coiled for transport and storage
- See page D-16 for pressure drop graphs

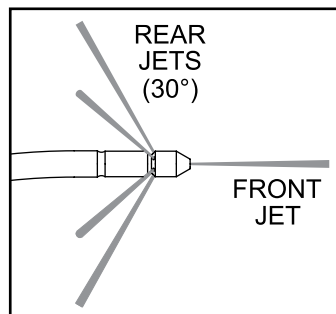
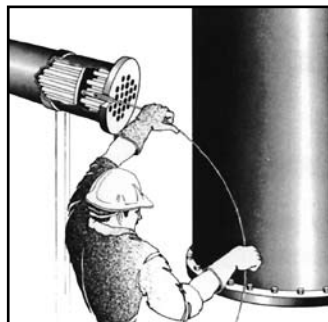


Part No. XX = length (ft)	Standard Lengths	Outside Diameter		Inside Diameter		Inlet Connection*	Maximum Operating Pressure		Bend Radius A**		Bend Radius B***	
		in	mm	in	mm		psi	bar	in	mm	in	mm
51015-XX	5, 10, 15, 20, 25, 35, 50	.170	4.32	.140	3.56	1/8" NPT Male	10,000	700	19	483	10	254
51020-XX	5, 10, 15, 20, 25, 35	.140	3.56	.110	2.79	1/8" NPT Male	10,000	700	16	406	7	178

* See details on all connection types beginning on page I-2.

** Bend Radius A: Radius beyond which permanent set condition may occur.

*** Bend Radius B: Radius beyond which kinking may occur.



Related Items

DURASAFE™ FOOT CONTROL GUNS — See pages C-7 – C-8

FLEX LANCE STRAIN RELIEF HOSES — See pages G-4

STANDARD PATTERNS

Length (ft)	Series 51015 .170" O.D.	Series 51020 .140" O.D.
5'	1 Front 6 Back 30° 7 Jets Total	1 Front 6 Back 30° 7 Jets Total
10'	1 Front 5 Back 30° 6 Jets Total	1 Front 6 Back 30° 7 Jets Total
15'	1 Front 5 Back 30° 6 Jets Total	1 Front 5 Back 30° 6 Jets Total
20'	1 Front 5 Back 30° 6 Jets Total	1 Front 6 Back 30° 7 Jets Total
25'	1 Front 5 Back 30° 6 Jets Total	1 Front 5 Back 30° 6 Jets Total
35'	1 Front 5 Back 30° 6 Jets Total	1 Front 4 Back 30° 5 Jets Total
50'	1 Front 5 Back 30° 6 Jets Total	Not Available

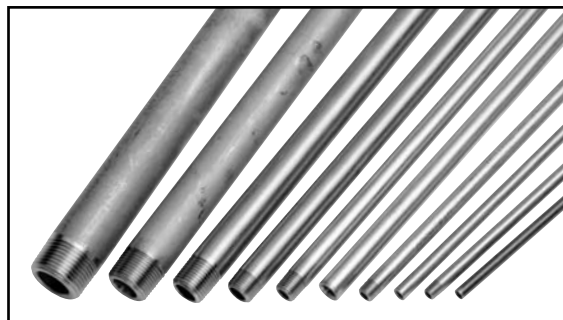
HOSES & LANCES

UP TO 15,000 PSI (1000 BAR)



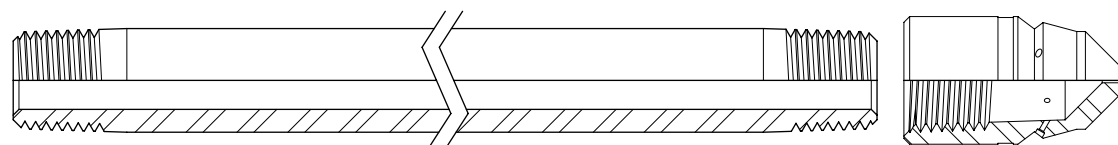
RIGID LANCES

- For use in manual or automatic tube cleaning applications
- To order, use five digit part number followed by a dash (-) and length in feet (up to 25 ft)
- Available in a range of sizes and connections
- See pages D-16 – D-18 for pressure drop graphs



NPT MALE x NPT MALE

For use with female pipe threaded tube cleaning nozzles (see pages E-19 to E-22 and E-24 to E-27).

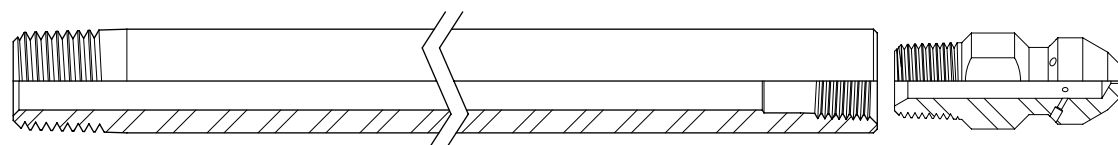


Part No. XX = length (ft)	Connection Type*		Outside Diameter		Inside Diameter		Material	Maximum Operating Pressure	
	Inlet End	Nozzle End	in	mm	in	mm		psi	bar
54299-XX	1" NPT Male	1" NPT Male	1.315	33.40	.599	15.21	Stainless Steel	10,000	700
56692-XX	3/4" NPT Male	3/4" NPT Male	1.050	26.67	.434	11.00	Stainless Steel	15,000	1000
53731-XX	3/4" NPT Male	3/4" NPT Male	1.050	26.67	.614	15.60	Stainless Steel	10,000	700
51082-XX	1/2" NPT Male	1/2" NPT Male	.840	21.34	.534	13.56	Stainless Steel	15,000	1000
50596-XX	3/8" NPT Male	3/8" NPT Male	.675	17.15	.415	10.54	Stainless Steel	15,000	1000
50594-XX	1/4" NPT Male	1/4" NPT Male	.540	13.72	.302	7.67	Stainless Steel	15,000	1000
50592-XX	1/8" NPT Male	1/8" NPT Male	.405	10.29	.215	5.46	Stainless Steel	15,000	1000
51081-XX	1/16" NPT Male	1/16" NPT Male	.312	7.92	.182	4.62	Stainless Steel	15,000	1000

* See details on all connection types beginning on page I-2.

NPT MALE x NPT FEMALE

For use with Series MP nozzles (see page E-23).



Part No. XX = length (ft)	Connection Type*		Outside Diameter		Inside Diameter		Material	Maximum Operating Pressure		Nozzle Type/Size
	Inlet End	Nozzle End	in	mm	in	mm		psi	bar	
51069-XX	1/2" NPT Male	3/8" NPT Fml	.840	21.34	.534	13.56	Stainless Steel	10,000	700	MP4
51068-XX	3/8" NPT Male	1/4" NPT Fml	.675	17.15	.415	10.54	Stainless Steel	10,000	700	MP3
51067-XX	1/4" NPT Male	1/8" NPT Fml	.540	13.72	.302	7.67	Stainless Steel	10,000	700	MP2
51066-XX	1/8" NPT Male	1/16" NPT Fml	.405	10.29	.215	5.46	Stainless Steel	10,000	700	MP1

* See details on all connection types beginning on page I-2.

HOSES & LANCES

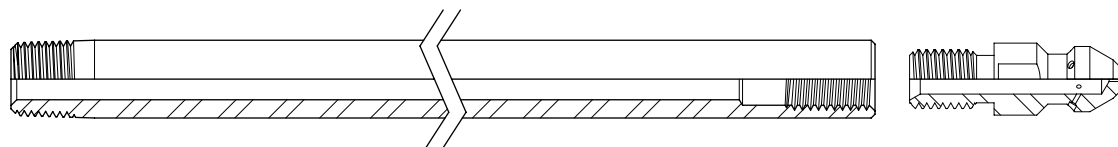
UP TO 15,000 PSI (1000 BAR)



RIGID LANCES

NPT MALE x MACHINE SCREW THREAD FEMALE

For use with Series MS nozzles (see page E-28).

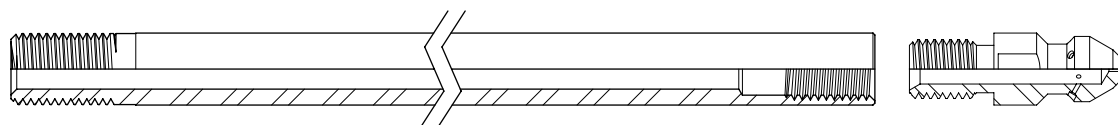


Part No. XX = length (ft)	Connection Type*		Outside Diameter		Inside Diameter		Material	Maximum Operating Pressure		Nozzle Type/Size
	Inlet End	Nozzle End	in	mm	in	mm		psi	bar	
54411-XX	1/8" NPT Male	5/16" UNF Female	.405	10.29	.215	5.46	Stainless Steel	10,000	700	MS3

* See details on all connection types beginning on page I-2.

MACHINE SCREW THREAD MALE x MACHINE SCREW THREAD FEMALE

For use with Series MS nozzles (see page E-28).



Part No. XX = length (ft)	Connection Type*		Outside Diameter		Inside Diameter		Material	Maximum Operating Pressure		Nozzle Type/Size
	Inlet End	Nozzle End	in	mm	in	mm		psi	bar	
51062-XX	3/8" UNF Male	5/16" UNF Female	.375	9.53	.209	5.31	Alloy Steel	10,000	700	MS3
51061-XX	5/16" UNF Male	1/4" UNF Female	.312	7.92	.182	4.62	Stainless Steel	10,000	700	MS2
51059-XX	1/4" UNF Male	#12 UNF Female	.250	6.35	.120	3.05	Alloy Steel	10,000	700	MS1

* See details on all connection types beginning on page I-2.

Related Items

RIGID LANCE ADAPTERS — See page F-20

HOSES & LANCES

UP TO 15,000 PSI (1000 BAR)



PRESSURE DROP DATA

The charts on this page and the next are used to approximate how much pressure will be lost through a particular hose or lance at a given flow rate. Because of frictional forces, the water exiting a hose or lance could be at a significantly lower pressure than at entry. In some cases, especially when using smaller hoses and lances, the flow rate that can be used is determined by pressure drop through a lance rather than the pump's maximum output.

PRESSURE DROP & NOZZLE SIZING

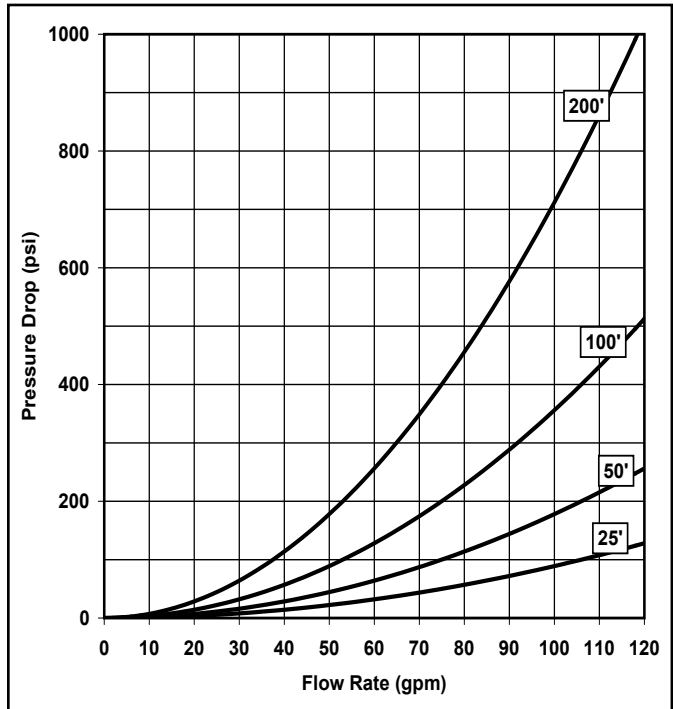
Pressure drop is especially important to understand when sizing nozzles. Use the following procedure for correct nozzle sizing:

1. Determine the pressure needed for a particular cleaning operation and subtract that amount from the desired pump operating pressure. The result is the permissible pressure drop.
2. Consult pressure drop chart for the hose to be used to determine what flow rate will result in the permissible pressure drop.
- 3a. If this flow rate exceeds the maximum flow of the pump, use the chart to find the pressure drop at the maximum pump flow and subtract that amount from the desired pump operating pressure to get the pressure at the nozzle. Then use the flow charts provided for the desired nozzle to select a nozzle, or nozzles, matching the desired flow and pressure.
- 3b. If this flow rate is within the capability of the pump, use the flow charts provided for the desired nozzle to select a nozzle, or nozzles, matching the desired flow and pressure.

Note: Doubling the length of a hose or lance will result in approximately twice the pressure drop at the same flow rate.

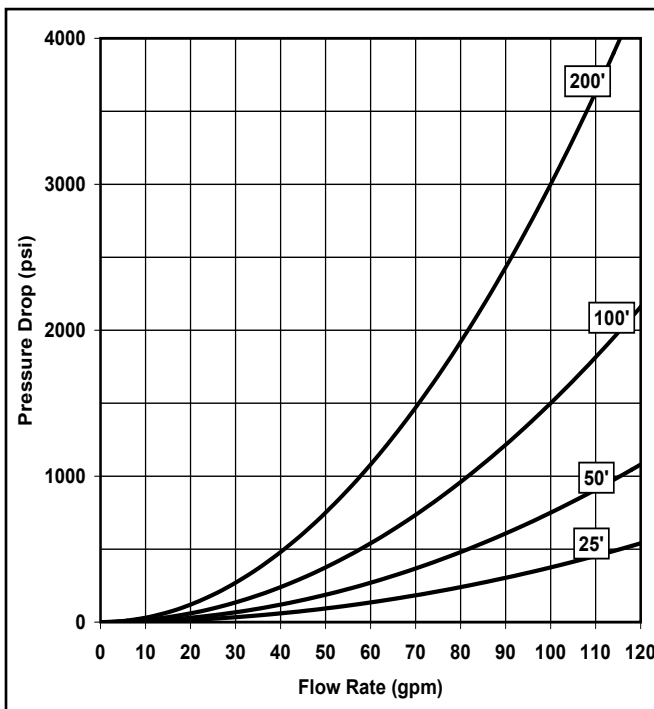
1" RUBBER WATERBLAST HOSE

Series 53235



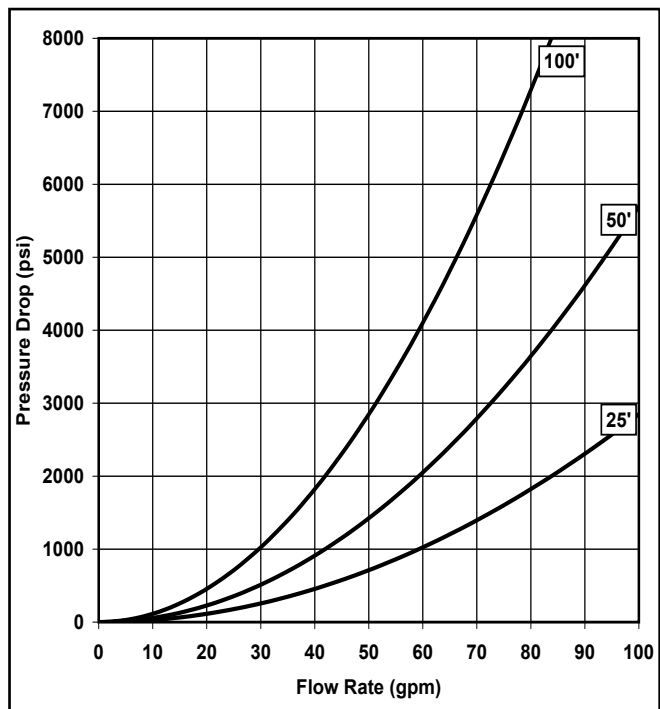
3/4" RUBBER WATERBLAST HOSE

Series 51118



1/2" RUBBER WATERBLAST HOSE

Series 25513 & 52241



HOSES & LANCES

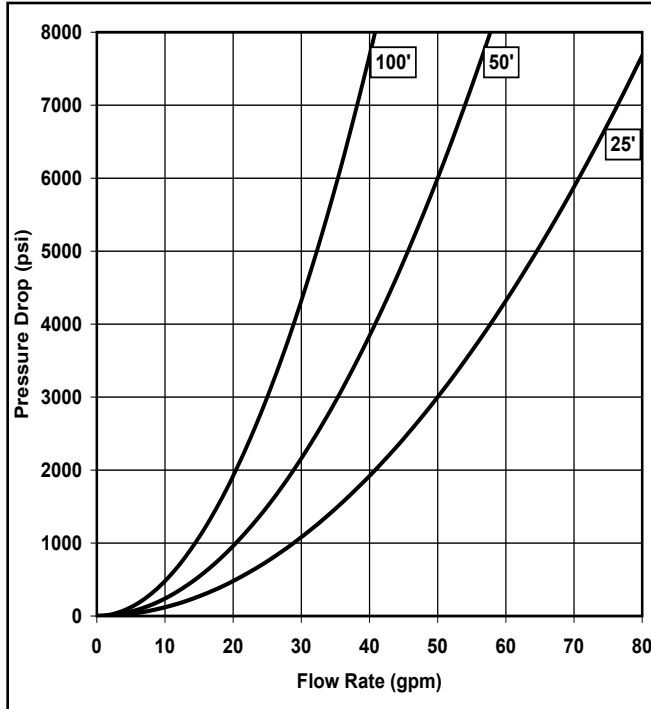
UP TO 15,000 PSI (1000 BAR)



PRESSURE DROP DATA

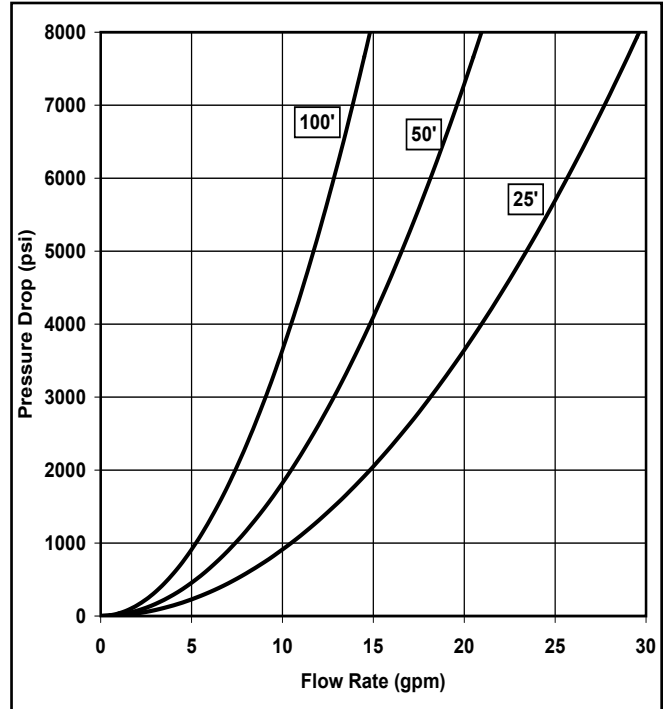
3/8" RUBBER WATERBLAST HOSE

Series 25576 & 52178



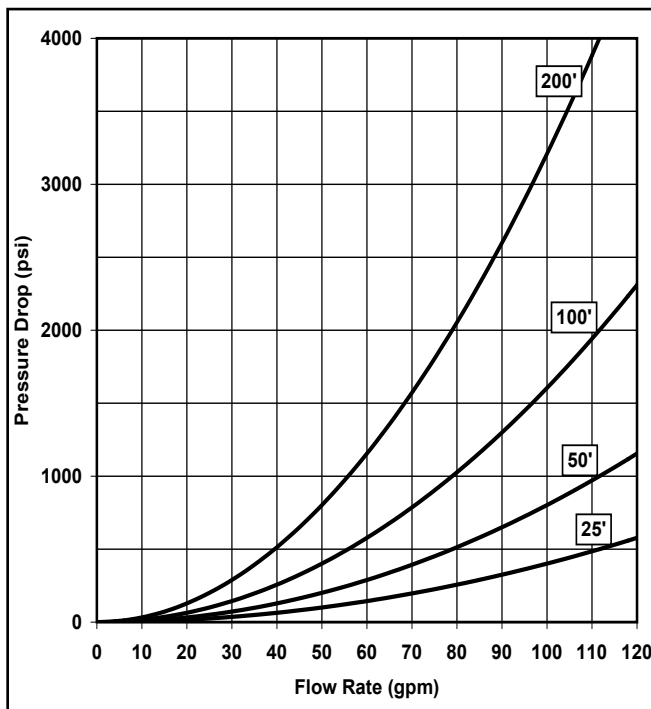
1/4" RUBBER WATERBLAST HOSE

Series 25914



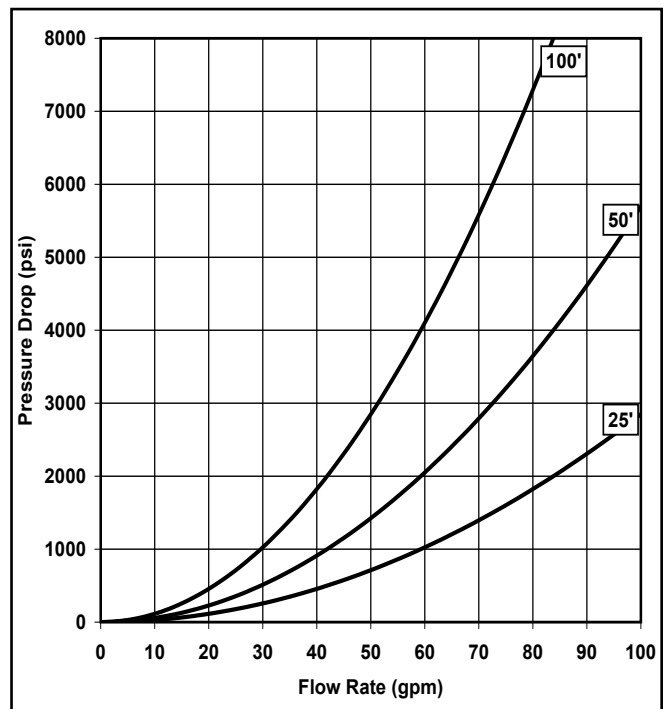
3/4" (20 mm) THERMOPLASTIC HOSE & FLEX LANCE

Series 29313



1/2" (13 mm) THERMOPLASTIC HOSE & FLEX LANCE

Series 28481 & 28524



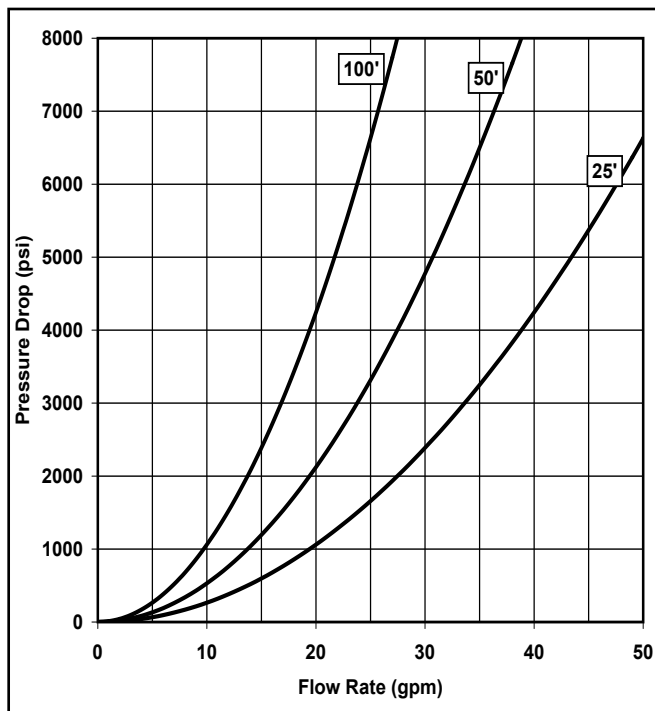
HOSES & LANCES

UP TO 15,000 PSI (1000 BAR)

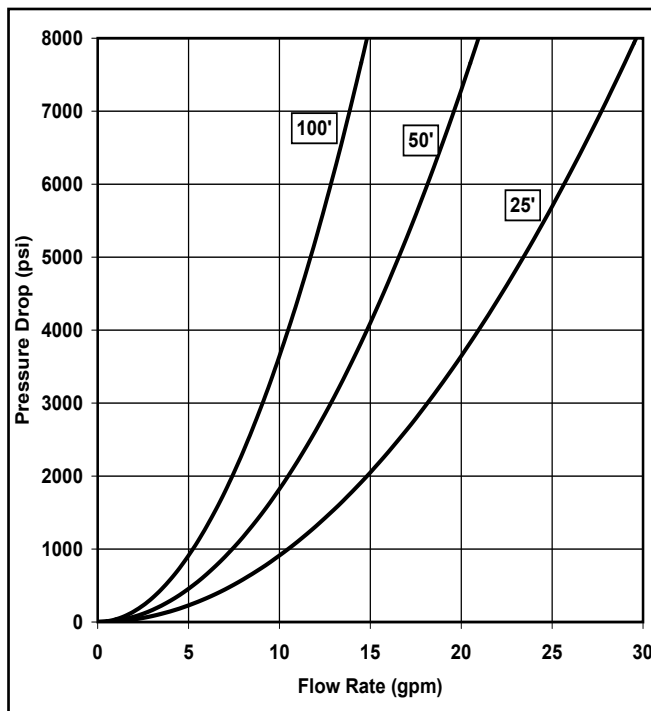


PRESSURE DROP DATA

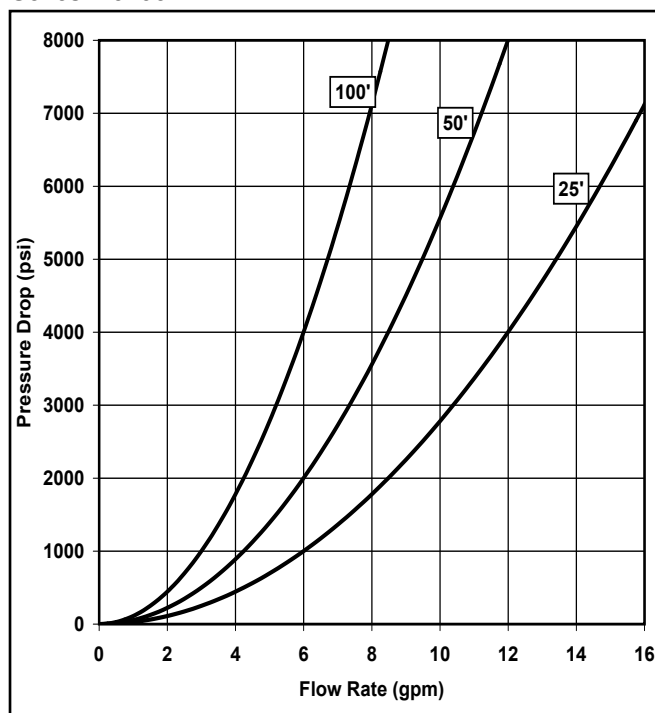
5/16" (8 mm) THERMOPLASTIC HOSE & FLEX LANCE
Series 27560 & 28673



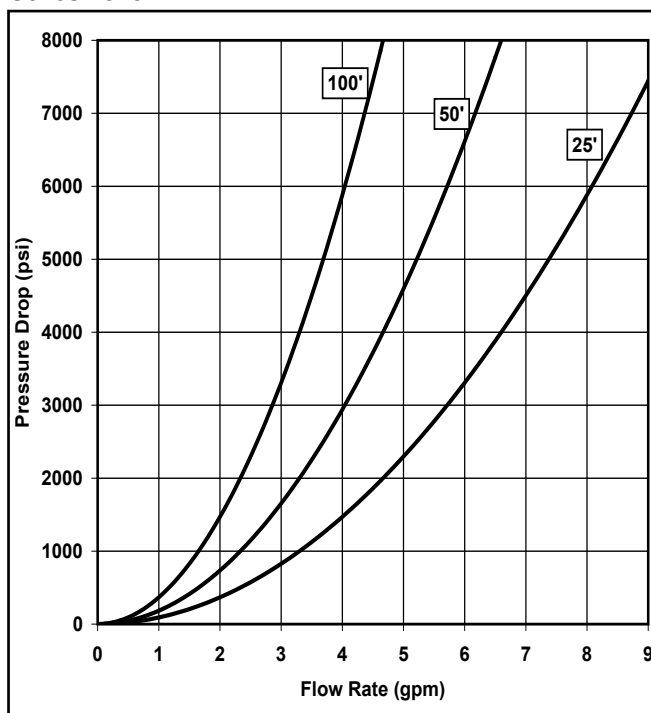
1/4" (6 mm) THERMOPLASTIC HOSE & FLEX LANCE
Series 26108 & 28490



3/16" (5 mm) THERMOPLASTIC HOSE & FLEX LANCE
Series 26106



5/32" (4 mm) THERMOPLASTIC HOSE & FLEX LANCE
Series 26104



HOSES &
LANCES

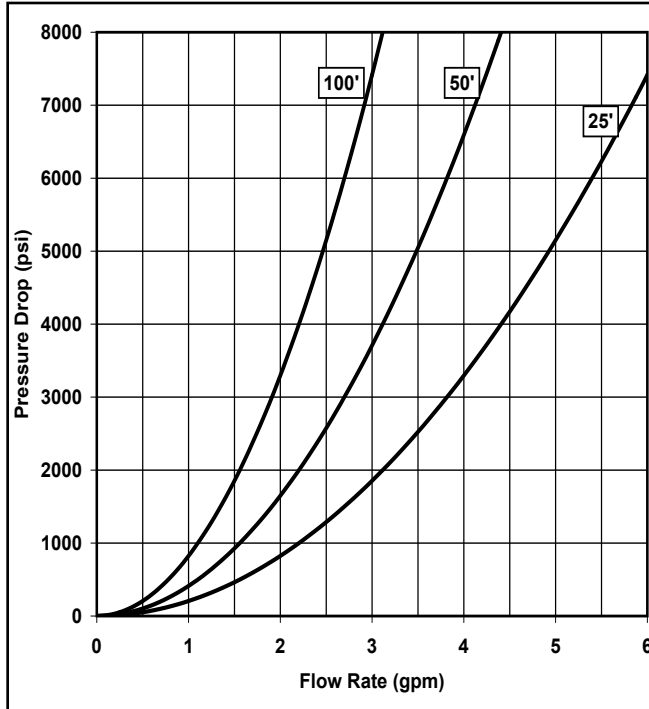
HOSES & LANCES

UP TO 15,000 PSI (1000 BAR)

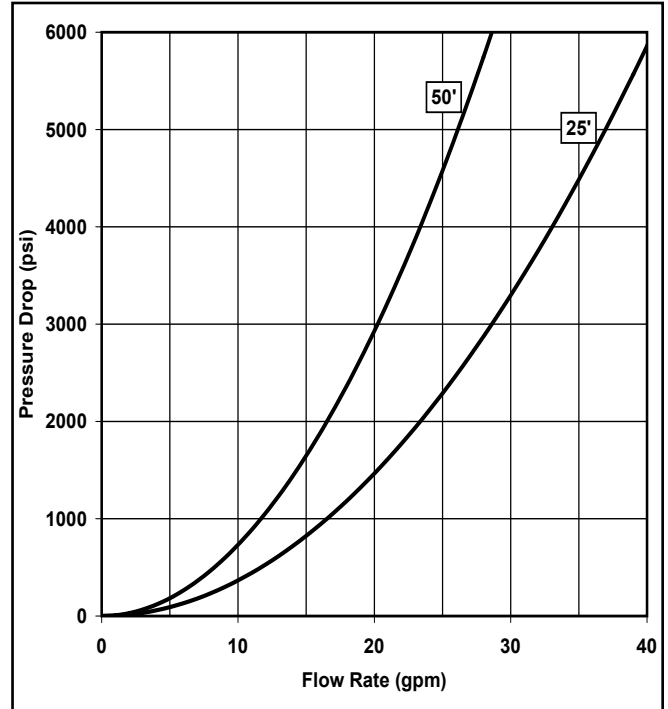


PRESSURE DROP DATA

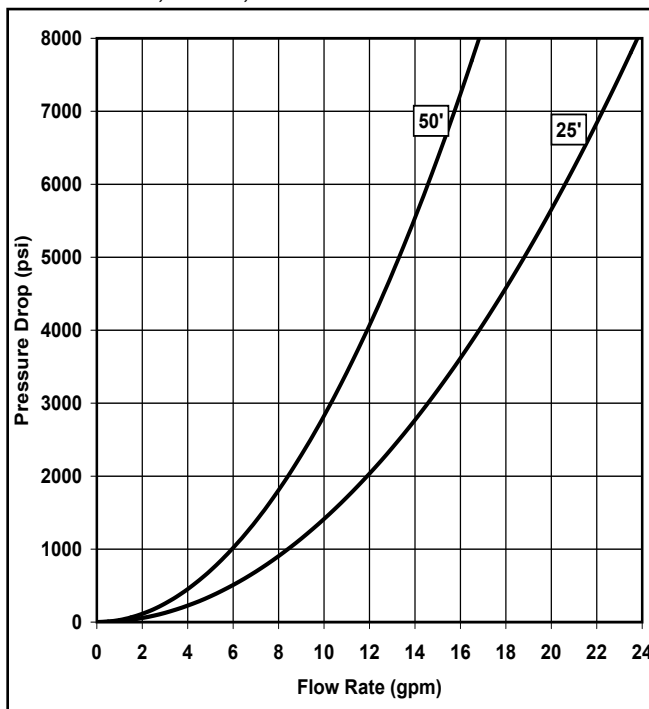
1/8" (3 mm) THERMOPLASTIC HOSE & FLEX LANCE
Series 28596



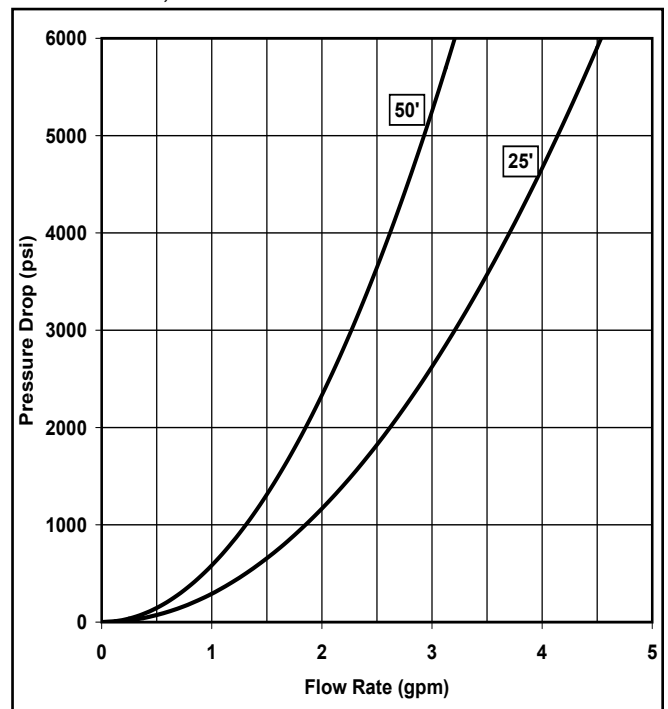
5/16" STAINLESS STEEL BRAIDED FLEX LANCE
Series 25571



1/4" STAINLESS STEEL BRAIDED FLEX LANCE
Series 25568, 25570, 50673 & 50752



3/16" STAINLESS STEEL BRAIDED FLEX LANCE
Series 50559, 51162 & 51498



HOSES & LANCES

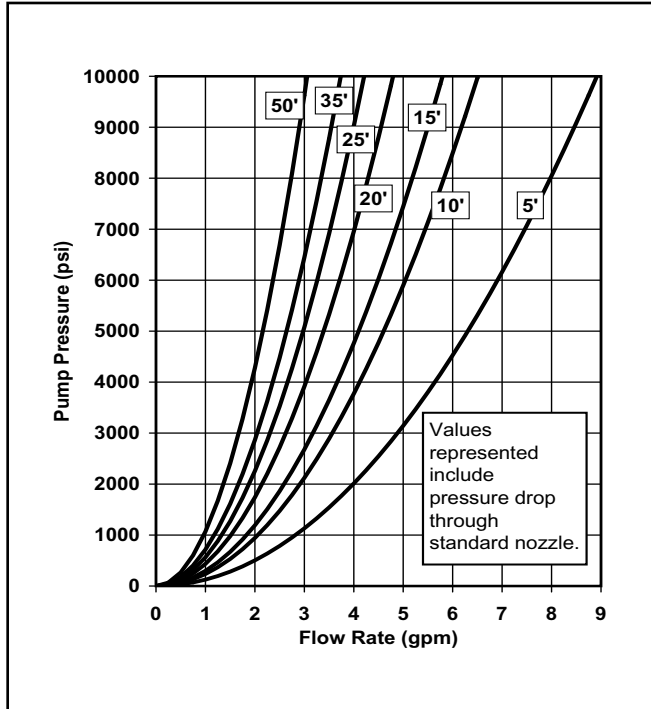
UP TO 15,000 PSI (1000 BAR)



PRESSURE DROP DATA

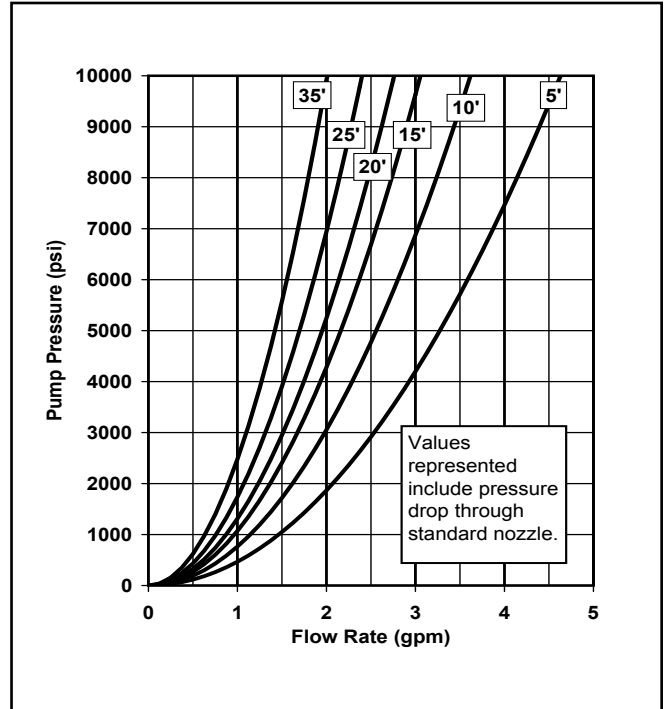
.170" O.D. STEELFLEX™ LANCE

Series 51015



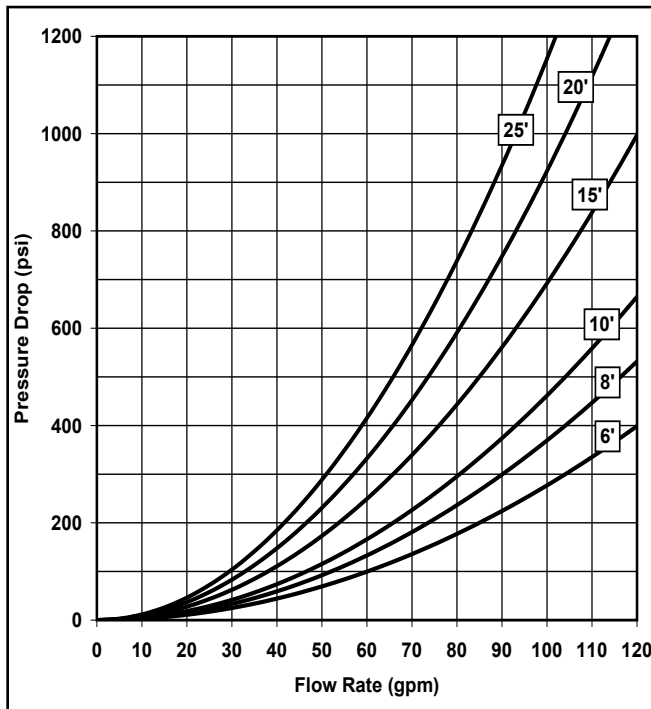
.140" O.D. STEELFLEX™ LANCE

Series 51020



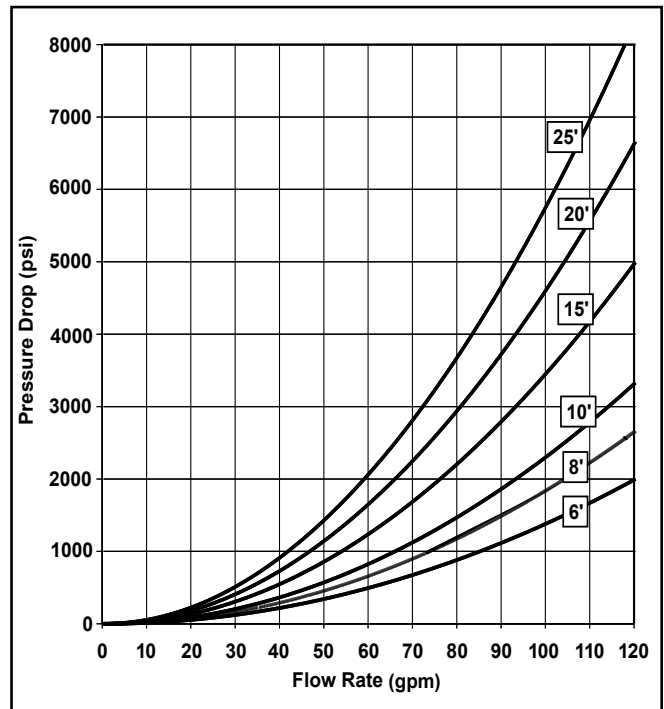
RIGID LANCES — 1" PIPE

Series 54299



RIGID LANCES — 3/4" PIPE 15,000 psi (1000 bar)

Series 56692



HOSES & LANCES

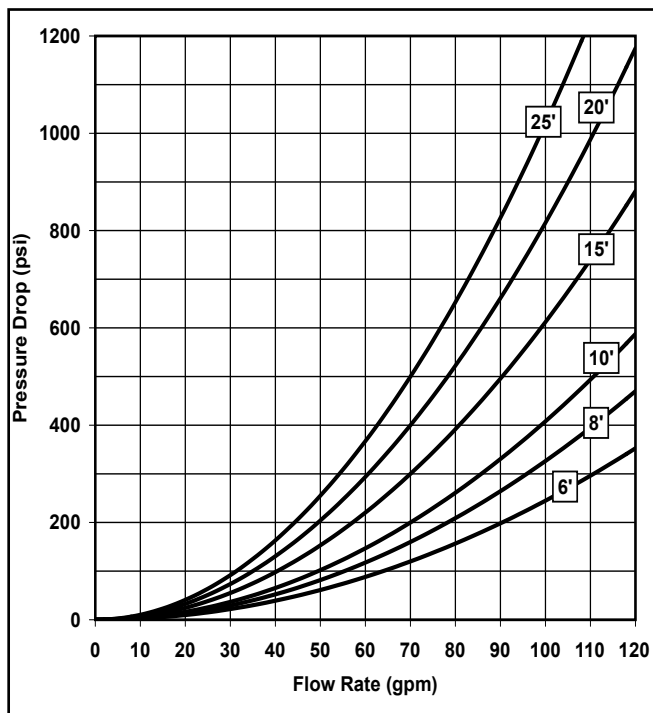
HOSES & LANCES

UP TO 15,000 PSI (1000 BAR)

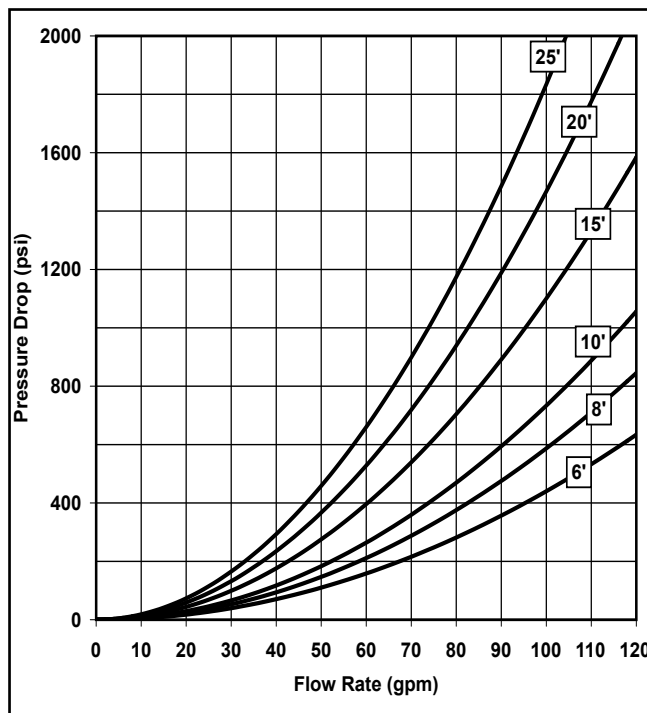


PRESSURE DROP DATA

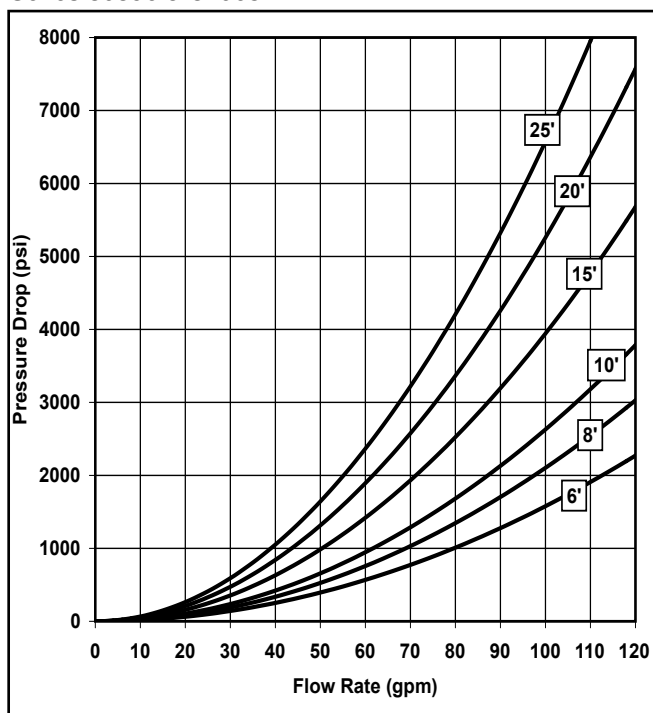
RIGID LANCES — 3/4" PIPE 10,000 psi (700 bar)
Series 53731



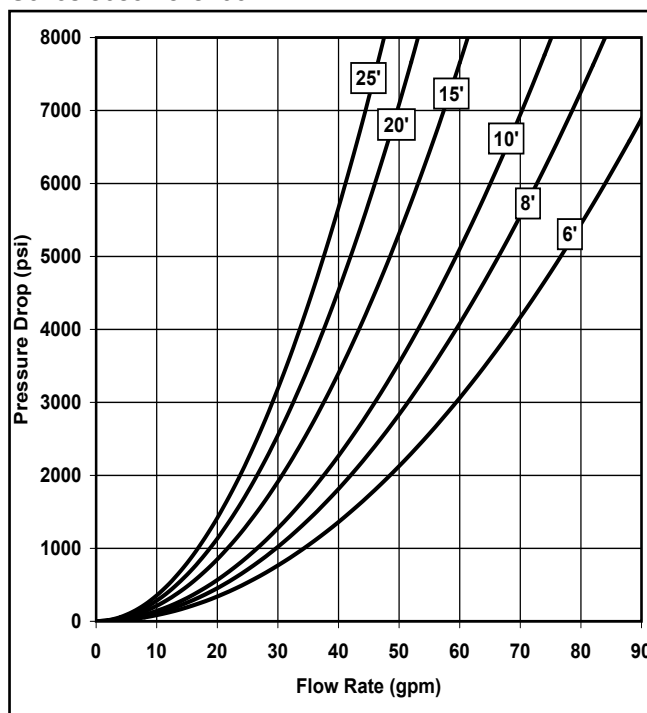
RIGID LANCES — 1/2" PIPE
Series 51069 & 51082



RIGID LANCES — 3/8" PIPE
Series 50596 & 51068



RIGID LANCES — 1/4" PIPE
Series 50594 & 51067



HOSES & LANCES

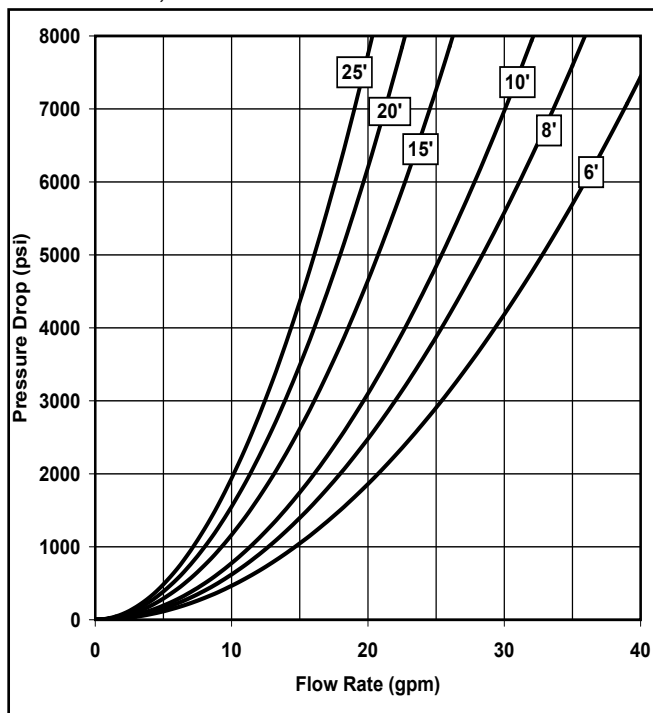
UP TO 15,000 PSI (1000 BAR)



PRESSURE DROP DATA

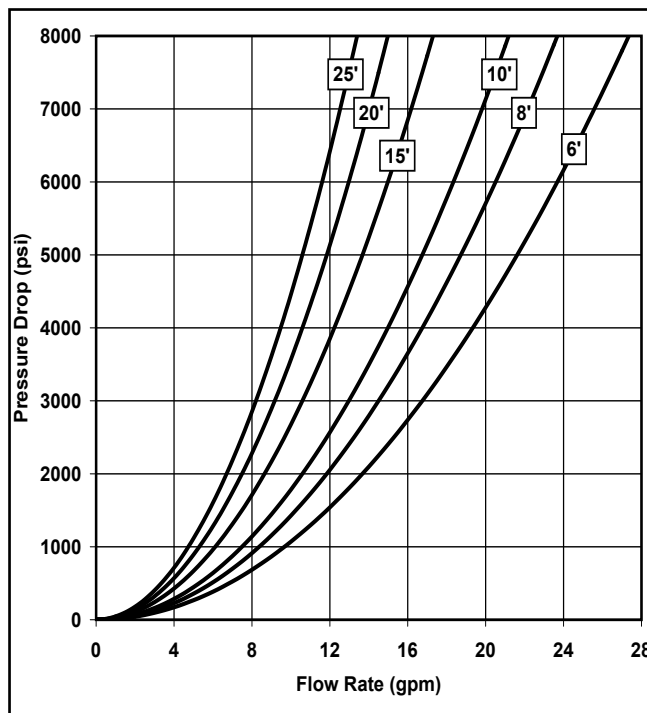
RIGID LANCES — 1/8" PIPE

Series 50592, 51066 & 54411



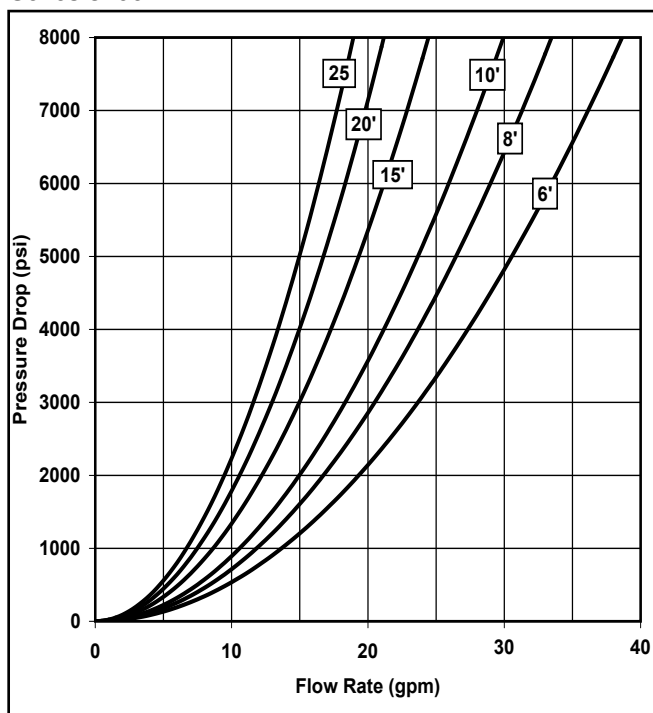
RIGID LANCES — 1/16" PIPE

Series 51061 & 51081



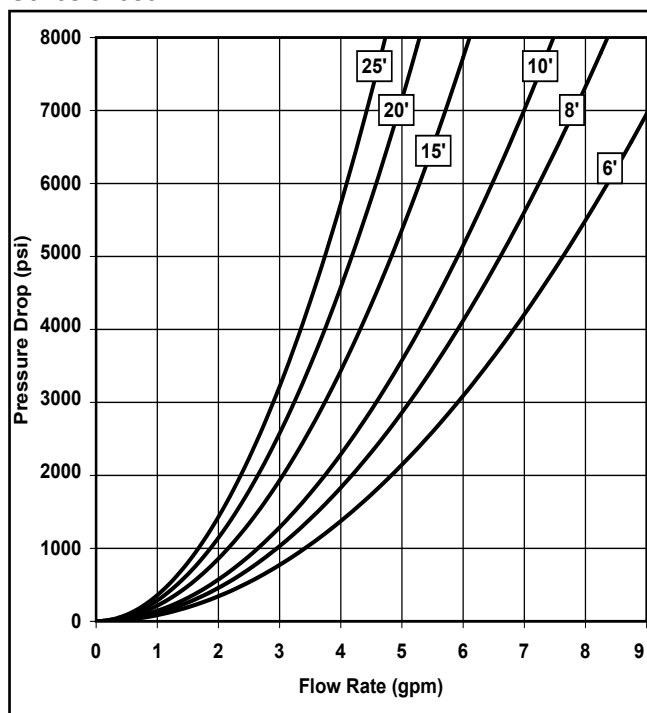
RIGID LANCES — 3/8" O.D. MECHANICAL TUBING

Series 51062



RIGID LANCES — 1/4" O.D. MECHANICAL TUBING

Series 51059



HOSES & LANCES

NOZZLES

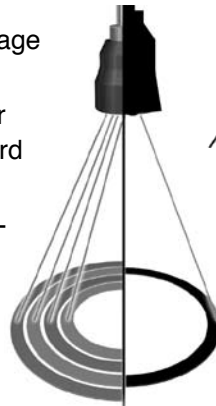
UP TO 15,000 PSI (1000 BAR)



ORBI-JET™ QCX SELF-ROTATING SURFACE CLEANING NOZZLE

The Jetstream Orbi-Jet QCX is a rugged, self-powered, rotating nozzle utilizing up to four straight-pattern, hard hitting, replaceable nozzles. The nozzle rotor rotates in a 360° pattern to provide maximum surface coverage and superior cleaning.

- Each of the four powerful, cohesive, rotating jets follows a different cleaning path to provide greater coverage and less streaking than a fan tip or single straight nozzle
- Longer straight-flow passages for superior cutting efficiency
- Magnetic braking system controls rotational speed for minimal wear and maximum impact without streaking
- Water provides the rotational motion and creates the bearing on which the nozzle spins. No drive belts or ball bearings to replace!
- Use with Tungsten carbide **OX Series** nozzles or sapphire **UHPX Series** nozzles
- Light-weight shroud protects nozzle from damage during operation
- Rebuild kit allows five-minute overhaul of wear components right in the field using two standard hex wrenches
- Retrofit kit available to convert a standard two-jet 15,000 psi Orbi-Jet to the QCX design



Orbi-Jet QCX

4 Nozzles, 4 Patterns, Superior Coverage, Reduced Streaking

Most Rotating Nozzles

2 Nozzles, but only 1 pattern

Part No.	Inlet Connection*	Speed Range	Diameter (Less Shroud)		Assembly Length		Assembly Weight		Maximum Flow Rate (Hand Gun)		Maximum Operating Pressure	
		RPM	in	mm	in	mm	lb	kg	gpm	lpm	psi	bar
54280	1/2" NPT Fml	1,000-1,500	2.0	51	3.7	94	2.2	1.0	25	95	15,000	1000

* See details on all connection types beginning on page I-2.

Related Items

OX NOZZLES — See page E-2

UHPX NOZZLES — See page E-3

DURASAFE™ HAND GUNS — See pages C-1 – C-6

Conversion Kit

Includes rotor assembly, retaining screw, and two nozzle port plugs to convert a standard Orbi-Jet to an Orbi-Jet QCX. **Part No. 54275**



Accessories

NOZZLE EXTENSIONS

Extensions are installed into the Orbi-Jet QCX Nozzle to provide a wider cleaning pattern and serve as flow straighteners, further reducing turbulence for more aggressive waterjets. **Part No. 53844** (Sold Individually)

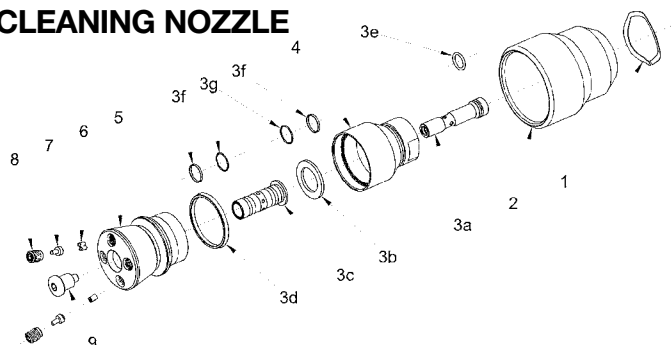


NOZZLES

UP TO 15,000 PSI (1000 BAR)



ORBI-JET™ QCX SELF-ROTATING SURFACE CLEANING NOZZLE

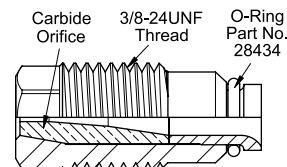


Replacement Parts

Item	Part No.	Description
1	26762	Retaining Ring
2	52157	Shroud
3	52305	Rebuild Kit (Items 3a to 3g)
4	52169	Body
5	54277	Rotor
6	28435	Straightening Vane
7	53503	Plug
8	53502	Plug Retainer
9	54276	Retaining Screw

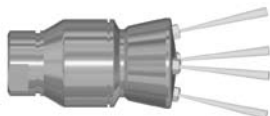
OX SERIES CARBIDE NOZZLES

- High productivity carbide nozzles designed for use in the Orbi-Jet QCX.
- Specially engineered carbide orifices provide aggressive, cohesive waterjets
- Efficient design reduces turbulence and orifice wear
- Select nozzles from the charts below by choosing operating pressure, desired flow, and two or four nozzle operation



WARNING: Flow rates greater than 10 gpm (38 lpm) at 15,000 psi (1000 bar) are not recommended for use in hand gun cleaning operations with an Orbi-Jet QCX due to excessive thrust.

Four OX Nozzles in Orbi-Jet QCX



Part No.	Orifice Size	Flow (gpm) at specified pressures (psi)											Flow (lpm) at specified pressures (bar)								
		5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000	
54331	000	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.7	4.9	5.0	11.3	12.7	14.0	15.1	16.1	17.1	18.0	18.8	
54332	00	5.5	6.0	6.5	6.9	7.2	7.6	7.9	8.3	8.6	8.9	9.2	19.7	22.5	24.8	27.0	29.0	30.8	32.5	34.2	
54333	0	7.4	8.0	8.6	9.1	9.7	10.1	10.6	11.1	11.5	11.9	12.3	26.1	29.8	33.1	36.0	38.7	41.2	43.6	45.8	
54334	1	9.2	10.0	10.8	11.5	12.2	12.8	13.4	14.0	14.5	15.0	15.5	32.7	37.4	41.6	45.3	48.8	52.0	55.0	57.9	
54336	2	12.0	13.1	14.1	15.1	15.9	16.8	17.6	18.3	19.0	19.7	20.4	42.6	48.9	54.4	59.4	63.9	68.2	72.2	76.0	
54337	3	14.6	15.9	17.1	18.3	19.3	20.4	21.3	22.2	23.1	24.0	24.8	51.6	59.2	66.0	72.0	77.6	82.8	87.7	92.3	
54338	4	17.4	19.0	20.4	21.8	23.1	24.3	25.5	26.6	27.6	28.6	29.6	61.4	70.6	78.7	85.9	92.7	98.9	104.8	110.3	

Two OX Nozzles in Orbi-Jet QCX



Part No.	Orifice Size	Flow (gpm) at specified pressures (psi)											Flow (lpm) at specified pressures (bar)								
		5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000	
54332	00	3.1	3.3	3.5	3.7	3.9	4.1	4.3	4.4	4.6	4.7	4.9	11.0	12.4	13.6	14.6	15.6	16.5	17.4	18.2	
54333	0	4.0	4.3	4.6	4.9	5.1	5.4	5.6	5.8	6.0	6.2	6.4	14.2	16.0	17.7	19.1	20.5	21.7	22.9	24.0	
54334	1	4.9	5.3	5.7	6.1	6.4	6.7	7.0	7.3	7.6	7.8	8.1	17.5	19.9	21.9	23.8	25.5	27.1	28.6	30.1	
54336	2	6.3	6.9	7.4	7.8	8.3	8.7	9.1	9.5	9.8	10.2	10.5	22.5	25.6	28.3	30.8	33.1	35.2	37.2	39.1	
54337	3	7.6	8.3	8.9	9.4	10.0	10.5	11.0	11.4	11.9	12.3	12.7	26.9	30.7	34.1	37.1	39.9	42.5	45.0	47.3	
54338	4	9.0	9.8	10.5	11.2	11.8	12.4	13.0	13.6	14.1	14.6	15.1	31.9	36.4	40.5	44.1	47.5	50.6	53.5	53.3	

NOZZLES

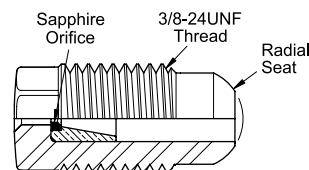
UP TO 15,000 PSI (1000 BAR)



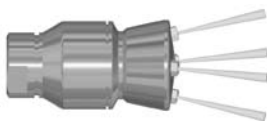
ORBI-JET™ QCX SELF-ROTATING SURFACE CLEANING NOZZLE

UHPX SERIES SAPPHIRE NOZZLES

- High productivity sapphire nozzles for use in the Orbi-Jet QCX
- Tapered orifice retainer reduces turbulence and provides a cohesive, aggressive waterjet
- Sapphire orifices are more durable than carbide
- Select nozzles from the charts below by choosing operating pressure, desired flow, and two or four nozzle operation



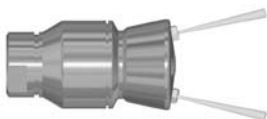
Four UHPX Nozzles in Orbi-Jet QCX



WARNING: Flow rates greater than 10 gpm (38 lpm) at 15,000 psi (1000 bar) are not recommended for use in hand gun cleaning operations with an Orbi-Jet QCX due to excessive thrust.

Part No.	Orifice Size	Flow (gpm) at specified pressures (psi)											Flow (lpm) at specified pressures (bar)							
		5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000
54017	21	3.1	3.3	3.6	3.8	3.9	4.1	4.3	4.5	4.6	4.8	4.9	11.1	12.4	13.6	14.7	15.7	16.7	17.5	18.4
54018	22	3.3	3.6	3.8	4.1	4.3	4.5	4.7	4.8	5.0	5.2	5.3	11.9	13.4	14.8	15.9	17.0	18.1	19.0	19.9
53646	23	3.6	3.9	4.1	4.4	4.6	4.8	5.0	5.2	5.4	5.6	5.8	12.8	14.5	15.9	17.2	18.4	19.5	20.6	21.6
54019	24	3.9	4.2	4.5	4.7	5.0	5.2	5.4	5.6	5.9	6.1	6.2	13.8	15.6	17.1	18.5	19.8	21.1	22.2	23.3
53647	25	4.1	4.5	4.8	5.1	5.3	5.6	5.8	6.1	6.3	6.5	6.7	14.8	16.7	18.4	19.9	21.3	22.7	23.9	25.1
54021	27	4.7	5.1	5.5	5.8	6.1	6.4	6.7	7.0	7.2	7.5	7.7	16.8	19.1	21.1	22.9	24.5	26.0	27.5	28.9
54297	28	5.0	5.5	5.8	6.2	6.6	6.9	7.2	7.5	7.8	8.0	8.3	17.9	20.4	22.5	24.4	26.2	27.8	29.4	30.9
53648	29	5.4	5.8	6.2	6.6	7.0	7.3	7.7	8.0	8.3	8.6	8.5	19.1	21.7	24.0	26.0	27.9	29.7	31.4	32.9
54441	30	5.7	6.2	6.6	7.0	7.4	7.8	8.2	8.5	8.8	9.1	9.4	20.2	23.0	25.5	27.7	29.7	31.6	33.4	35.1
54022	31	6.0	6.6	7.0	7.5	7.9	8.3	8.7	9.0	9.4	9.7	10.0	21.5	24.4	27.1	29.4	31.6	33.6	35.5	37.3
53649	33	6.8	7.3	7.9	8.4	8.9	9.3	9.7	10.1	10.5	10.9	11.3	24.0	27.4	30.4	33.0	35.5	37.8	39.9	42.0
54442	34	7.1	7.8	8.3	8.9	9.4	9.8	10.3	10.7	11.1	11.5	11.9	25.4	28.9	32.1	34.9	37.5	40.0	42.3	44.4
54443	37	8.3	9.1	9.8	10.4	11.0	11.6	12.1	12.6	13.1	13.6	14.0	29.6	33.8	37.6	40.9	44.0	46.9	49.6	52.2
54282	38	8.8	9.5	10.3	10.9	11.6	12.2	12.7	13.3	13.8	14.3	14.7	31.1	35.6	39.5	43.1	46.3	49.4	52.2	54.9
54283	42	10.6	11.5	12.4	13.2	14.0	14.7	15.4	16.1	16.7	17.3	17.9	37.5	43.0	47.8	52.1	56.1	59.8	63.3	66.6
54284	46	12.6	13.7	14.8	15.7	16.7	17.5	18.4	19.1	19.9	20.6	21.3	44.5	51.1	56.8	62.0	66.8	71.3	75.5	79.4

Two UHPX Nozzles in Orbi-Jet QCX



Part No.	Orifice Size	Flow (gpm) at specified pressures (psi)											Flow (lpm) at specified pressures (bar)							
		5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000
54441	30	3.1	3.4	3.6	3.8	4.0	4.2	4.4	4.5	4.7	4.9	5.0	11.3	12.6	13.9	15.0	16.0	16.9	17.8	18.7
54022	31	3.3	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0	5.1	5.3	11.9	13.4	14.7	15.8	16.9	17.9	18.9	19.8
53649	33	3.7	4.0	4.2	4.5	4.7	5.0	5.2	5.4	5.6	5.8	5.9	13.1	14.8	16.3	17.7	18.9	20.0	21.1	22.1
54442	34	3.9	4.2	4.5	4.7	5.0	5.2	5.4	5.7	5.9	6.1	6.3	13.8	15.6	17.2	18.6	19.9	21.1	22.3	23.3
54443	37	4.5	4.8	5.2	5.5	5.8	6.1	6.3	6.6	6.8	7.1	7.3	15.9	18.1	19.9	21.6	23.2	24.6	26.0	27.2
54282	38	4.7	5.1	5.4	5.8	6.1	6.4	6.7	6.9	7.2	7.4	7.7	16.7	18.9	20.9	22.7	24.3	25.8	27.2	28.6
54283	42	5.6	6.1	6.5	6.9	7.3	7.7	8.0	8.3	8.6	8.9	9.2	19.9	22.6	25.0	27.2	29.2	31.0	32.8	34.4
54284	46	6.6	7.2	7.7	8.2	8.6	9.1	9.5	9.9	10.3	10.6	11.0	23.4	26.7	29.6	32.2	34.5	36.8	38.9	40.9

NOZZLES

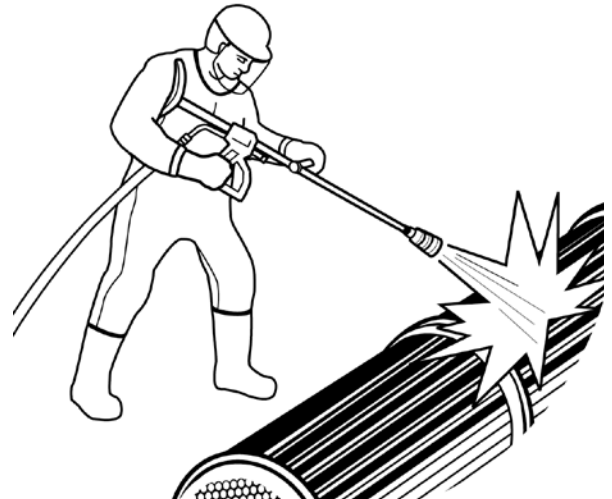
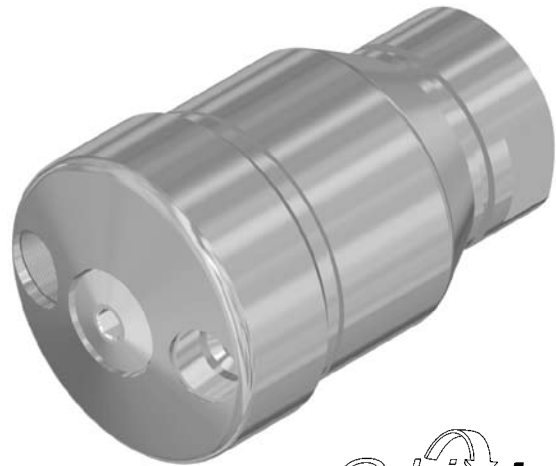
UP TO 15,000 PSI (1000 BAR)



ORBI-JET™ SELF-ROTATING SURFACE CLEANING NOZZLE

The Jetstream Orbi-Jet is a rugged, self-powered, rotating nozzle utilizing two straight-pattern, hard-hitting, replaceable nozzles. The nozzle rotor rotates in a 360° pattern to provide maximum surface coverage and superior cleaning.

- Magnetic braking system controls rotational speed for minimal wear and maximum impact without streaking
- Water provides the rotational motion and creates the bearing on which the nozzle spins. No drive belts or ball bearings to replace!
- Use with Tungsten carbide **OR Series** nozzles or **ORS Series** sapphire nozzles
- Light-weight shroud protects nozzle from damage during operation
- Rebuild kit allows five minute overhaul of wear components right in the field using two standard hex wrenches



NOZZLES



Part No.	Inlet Connection*	Speed Range	Diameter (Less Shroud)		Assembly Length		Assembly Weight		Maximum Flow Rate (Hand Gun)		Maximum Operating Pressure	
		RPM	in	mm	in	mm	lb	kg	gpm	lpm	psi	bar
52200	1/2" NPT Fml	1,000-1,500	2.1	54	3.6	92	2.3	1.0	25	95	15,000	1000

* See details on all connection types beginning on page I-2.

Related Items

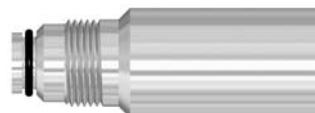
DURASAFE™ HAND GUNS — See pages C-1 – C-6

Accessories

NOZZLE EXTENSIONS

Extensions are installed into the Orbi-Jet Nozzle to provide a wider cleaning pattern and serve as flow straighteners, further reducing turbulence for more aggressive waterjets.

Part No. 52320-05 (Sold Individually)



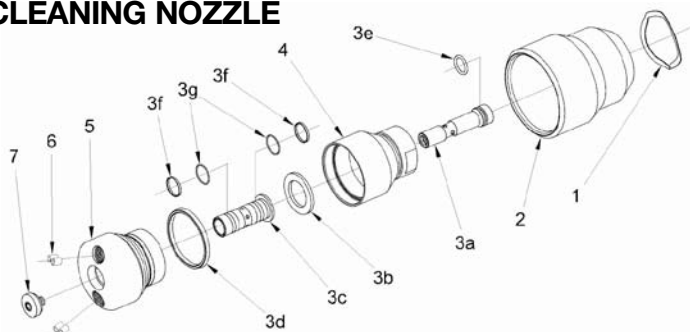
NOZZLES

UP TO 15,000 PSI (1000 BAR)



ORBI-JET™

SELF-ROTATING SURFACE CLEANING NOZZLE

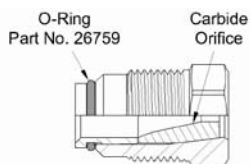


Replacement Parts

Item	Part No.	Description
1	26762	Retaining Ring
2	52157	Shroud
3	52305	Rebuild Kit (Items 3a to 3g)
4	52169	Body
5	52173	Rotor
6	26871	Straightening Vane
7	52158	Retaining Screw

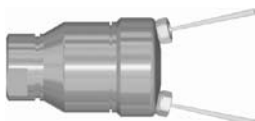
CARBIDE NOZZLES - OR

- Precision honed carbide orifice
- Designed for use with the Orbi-Jet
- Other sizes available upon request



WARNING: Flow rates greater than 10 gpm (38 lpm) at 15,000 psi (1000 bar) are not recommended for use in hand gun cleaning operations with an Orbi-Jet due to excessive thrust.

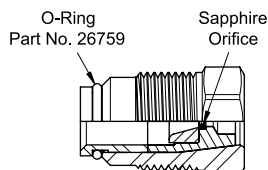
Two OR Nozzles in Orbi-Jet



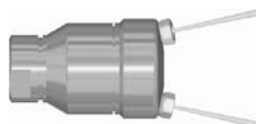
Part No.	Orifice Size	Flow (gpm) at specified pressures (psi)												Flow (lpm) at specified pressures (bar)									
		5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000			
52686	00	3.0	3.2	3.4	3.6	3.8	4.0	4.1	4.3	4.4	4.6	4.7	10.7	12.0	13.1	14.2	15.1	16.0	16.9	17.7			
52211	0	3.9	4.2	4.5	4.7	5.0	5.2	5.4	5.6	5.8	6.0	6.2	13.8	15.5	17.1	18.5	19.8	21.0	22.2	23.3			
52212	1	4.8	5.2	5.5	5.9	6.2	6.5	6.8	7.0	7.3	7.6	7.8	17.0	19.2	21.2	23.0	24.7	26.2	27.7	29.1			
52213	2	6.1	6.6	7.1	7.6	8.0	8.4	8.8	9.1	9.5	9.8	10.2	21.7	24.8	27.4	29.8	32.0	34.1	36.0	37.8			
52214	3	7.3	8.0	8.6	9.1	9.6	10.1	10.6	11.0	11.5	11.9	12.3	26.1	29.7	33.0	35.9	38.6	41.1	43.5	45.7			
52215	4	8.7	9.5	10.2	10.8	11.4	12.0	12.6	13.1	13.6	14.1	14.6	30.8	35.2	39.1	42.6	45.8	48.9	51.7	54.4			
52216	5	12.2	13.3	14.3	15.2	16.1	16.9	17.7	18.5	19.2	19.9	20.6	43.1	49.4	54.9	59.9	64.6	68.9	72.9	76.7			

SAPPHIRE NOZZLES - ORS

- More durable than carbide
- Designed for use with the Orbi-Jet
- Other sizes available upon request



Two ORS Nozzles in Orbi-Jet



Part No.	Orifice Size	Flow (gpm) at specified pressures (psi)											Flow (lpm) at specified pressures (bar)									
		5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000		
52739	0	3.0	3.2	3.5	3.7	3.8	4.0	4.2	4.3	4.5	4.6	4.8	10.8	12.1	13.3	14.3	15.3	16.2	17.0	17.8		
52741	1	3.7	4.0	4.2	4.5	4.7	5.0	5.2	5.4	5.6	5.8	5.9	13.1	14.8	16.3	17.7	18.9	20.0	21.1	22.1		
52742	2	4.7	5.1	5.4	5.8	6.1	6.4	6.7	6.9	7.2	7.4	7.7	16.7	18.9	20.9	22.7	24.3	25.8	27.2	28.6		
52743	3	5.6	6.1	6.5	6.9	7.3	7.7	8.0	8.3	8.6	8.9	9.2	19.9	22.6	25.0	27.2	29.2	31.0	32.8	34.4		
52744	4	6.6	7.2	7.7	8.2	8.6	9.1	9.5	9.9	10.3	10.6	11.0	23.4	26.7	29.6	32.2	34.5	36.8	38.9	40.9		
52746	5	8.2	9.0	9.6	10.3	10.9	11.4	11.9	12.4	12.9	13.4	13.8	29.3	33.5	37.1	40.5	43.5	46.4	49.0	51.6		

NOZZLES

UP TO 15,000 PSI (1000 BAR)



REPLACEABLE NOZZLE TIPS QUICK REFERENCE CHART

Nozzles Shown Actual Size	Nozzle	Connection*	Type/Use	Orifice Material	Patterns	Page
	HHTC	1/4" NPT Male	Hard Hitter	Tungsten Carbide	Straight 15° Fan 25° Fan 50° Fan	E-9
	HHS0	1/4" NPT Male	Hard Hitter	Sapphire	Straight	E-9
	S	1/4" NPT Male	Hard Hitter	Stainless Steel	Straight 15° Fan 25° Fan	E-11
	P4TC	1/4" NPT Male	Low Profile	Tungsten Carbide	Straight	E-10
	P2TC	1/8" NPT Male	Low Profile	Tungsten Carbide	Straight	E-10
	P1	1/16" NPT Male	Low Profile	Stainless Steel	Straight	E-11
	P1S0	1/16" NPT Male	Low Profile	Sapphire	Straight	E-11
	OX	3/8" - 24UNF	Orbi-Jet™ QCX	Tungsten Carbide	Straight	E-2
	UHPX	3/8" - 24UNF	Orbi-Jet QCX	Sapphire	Straight	E-3
	OR	1/2" - 28UNEF	Orbi-Jet™	Tungsten Carbide	Straight	E-5
	ORS	1/2" - 28UNEF	Orbi-Jet	Sapphire	Straight	E-5
	RM	1/2" - 28UNEF	RotoMag™	Tungsten Carbide	Straight	E-12, E-15
	RMS	1/2" - 28UNEF	RotoMag	Sapphire	Straight	E-12, E-16

* See details on all connection types beginning on page I-2.

NOZZLES

NOZZLES

UP TO 15,000 PSI (1000 BAR)



REPLACEABLE NOZZLE TIPS NOZZLE FLOW CHART

CARBIDE ORIFICES — GROUP A

Use chart below for the following nozzle series:



HHTC (page E-9)



P4TC (page E-10)



P2TC (page E-10)



OR* (page E-5)



RM* (pages E-12, E-15)

Orifice Size			Flow (gpm) at specified pressures (psi)											Flow (lpm) at specified pressures (bar)									
No.	in	mm	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000		
000	.018	0.46	.6	.7	.7	.8	.8	.9	.9	1.0	1.0	1.0	1.1	2.2	2.5	2.8	3.1	3.3	3.6	3.8	4.0		
00	.025	0.64	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.8	1.9	2.0	2.1	4.2	4.9	5.4	6.0	6.4	6.9	7.3	7.7		
0	.029	0.74	1.6	1.8	1.9	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	5.7	6.6	7.4	8.1	8.8	9.4	10.0	10.5		
1	.033	0.84	2.1	2.3	2.5	2.6	2.8	2.9	3.1	3.2	3.4	3.5	3.6	7.3	8.5	9.5	10.4	11.2	12.0	12.7	13.4		
2	.038	0.97	2.8	3.0	3.3	3.5	3.7	3.9	4.1	4.3	4.4	4.6	4.8	9.7	11.2	12.6	13.8	14.9	15.9	16.9	17.8		
3	.042	1.07	3.4	3.7	4.0	4.3	4.5	4.8	5.0	5.2	5.4	5.6	5.8	11.9	13.7	15.4	16.8	18.2	19.4	20.6	21.7		
4	.046	1.17	4.0	4.4	4.8	5.1	5.4	5.7	6.0	6.3	6.5	6.8	7.0	14.3	16.5	18.4	20.2	21.8	23.3	24.7	26.0		
5	.055	1.40	5.8	6.3	6.8	7.3	7.7	8.2	8.6	8.9	9.3	9.7	10.0	20.4	23.5	26.3	28.8	31.1	33.3	35.3	37.2		
6	.063	1.60	7.6	8.3	9.0	9.6	10.2	10.7	11.2	11.7	12.2	12.7	13.1	26.8	30.9	34.5	37.8	40.9	43.7	46.3	48.8		
7	.067	1.70	8.6	9.4	10.1	10.8	11.5	12.1	12.7	13.3	13.8	14.3	14.8	30.3	34.9	39.1	42.8	46.2	49.4	52.4	55.2		
8	.070	1.78	9.4	10.2	11.1	11.8	12.6	13.2	13.9	14.5	15.1	15.7	16.2	33.0	38.1	42.6	46.7	50.5	53.9	57.2	60.3		
9	.073	1.85	10.2	11.1	12.0	12.9	13.6	14.4	15.1	15.8	16.4	17.0	17.6	35.9	41.5	46.4	50.8	54.9	58.7	62.2	65.6		
10	.078	1.98	11.6	12.7	13.7	14.7	15.6	16.4	17.2	18.0	18.7	19.4	20.1	41.0	47.4	52.9	58.0	62.6	67.0	71.0	74.9		
12	.081	2.06	12.5	13.7	14.8	15.8	16.8	17.7	18.6	19.4	20.2	21.0	21.7	44.2	51.1	57.1	62.5	67.6	72.2	76.6	80.7		
14	.089	2.26	15.1	16.6	17.9	19.1	20.3	21.4	22.4	23.4	24.4	25.3	26.2	53.4	61.7	68.9	75.5	81.6	87.2	92.5	97.5		
15	.093	2.36	16.5	18.1	19.5	20.9	22.2	23.4	24.5	25.6	26.6	27.6	28.6	58.3	67.3	75.3	82.5	89.1	95.2	101.0	106.0		
20	.110	2.79	23.1	25.3	27.3	29.2	31.0	32.7	34.3	35.8	37.2	38.7	40.0	81.6	94.2	105.0	115.0	125.0	133.0	141.0	149.0		
30	.125	3.18	29.8	32.7	35.3	37.7	40.0	42.2	44.2	46.2	48.1	49.9	51.7	105.0	122.0	136.0	149.0	161.0	172.0	182.0	192.0		

* Do not use the chart above to size nozzles for the Orbi-Jet™ or RotoMag™. Use the charts specific to those products as they account for the water used by the nozzles to generate a water bear

CARBIDE ORIFICES — GROUP B

Use chart below for the following nozzle series:



OX* (page E-2)

Orifice Size			Flow (gpm) at specified pressures (psi)											Flow (lpm) at specified pressures (bar)									
No.	in	mm	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000		
000	.018	0.46	.6	.7	.8	.8	.9	.9	1.0	1.0	1.0	1.1	1.1	2.3	2.6	2.9	3.2	3.5	3.7	3.9	4.1		
00	.025	0.64	1.2	1.4	1.5	1.6	1.7	1.8	1.8	1.9	2.0	2.1	2.1	4.4	5.0	5.6	6.2	6.7	7.1	7.6	8.0		
0	.029	0.74	1.7	1.8	2.0	2.1	2.3	2.4	2.5	2.6	2.7	2.8	2.9	6.0	6.9	7.7	8.4	9.1	9.7	10.3	10.9		
1	.033	0.84	2.2	2.4	2.6	2.7	2.9	3.0	3.2	3.3	3.5	3.6	3.7	7.6	8.8	9.8	10.8	11.6	12.4	13.2	13.9		
2	.038	0.97	2.9	3.1	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0	10.1	11.7	13.0	14.3	15.4	16.5	17.5	18.4		
3	.042	1.07	3.5	3.8	4.1	4.4	4.7	4.9	5.2	5.4	5.6	5.8	6.0	12.3	14.2	15.9	17.4	18.8	20.1	21.4	22.5		
4	.046	1.17	4.2	4.6	5.0	5.3	5.6	5.9	6.2	6.5	6.8	7.0	7.3	14.8	17.1	19.1	20.9	22.6	24.2	25.6	27.0		

* Do not use the chart above to size nozzles for the Orbi-Jet or RotoMag. Use the charts specific to those products as they account for the water used by the nozzles to generate a water bearing.

NOZZLES

UP TO 15,000 PSI (1000 BAR)



REPLACEABLE NOZZLE TIPS

NOZZLE FLOW CHART

SAPPHIRE ORIFICES

Use chart below for the following nozzle series:



HHS0 (page E-9)



P1S0 (page E-11)



ORS* (page E-5)



RMS* (page E-12, E-16)

Orifice Size			Flow (gpm) at specified pressures (psi)											Flow (lpm) at specified pressures (bar)							
No.	in	mm	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000
000	.018	0.46	.5	.5	.5	.6	.6	.6	.7	.7	.7	.8	.8	1.6	1.9	2.1	2.3	2.5	2.6	2.8	3.0
00	.025	0.64	0.9	1.0	1.0	1.1	1.2	1.3	1.3	1.4	1.4	1.5	1.5	3.1	3.6	4.0	4.4	4.8	5.1	5.4	5.7
0	.029	0.74	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	1.9	2.0	2.1	4.3	4.9	5.5	6.0	6.5	7.0	7.4	7.8
1	.033	0.84	1.5	1.7	1.8	1.9	2.1	2.2	2.3	2.4	2.5	2.6	2.7	5.4	6.3	7.0	7.7	8.3	8.9	9.4	9.9
2	.038	0.97	2.0	2.2	2.4	2.6	2.7	2.9	3.0	3.2	3.3	3.4	3.5	7.2	8.3	9.3	10.2	11.0	11.8	12.5	13.2
3	.042	1.07	2.5	2.7	3.0	3.2	3.3	3.5	3.7	3.9	4.0	4.2	4.3	8.8	10.2	11.4	12.5	13.5	14.4	15.3	16.1
4	.046	1.17	3.0	3.3	3.5	3.8	4.0	4.2	4.4	4.6	4.8	5.0	5.2	10.6	12.2	13.6	14.9	16.1	17.3	18.3	19.3
5	.052	1.32	3.8	4.2	4.5	4.8	5.1	5.4	5.7	5.9	6.2	6.4	6.6	13.5	15.6	17.4	19.1	20.6	22.0	23.4	24.7

* Do not use the chart above to size nozzles for the Orbi-Jet™ or RotoMag™. Use the charts specific to those products as they account for the water used by the nozzles to generate a water bearing.

STEEL ORIFICES

Use chart below for the following nozzle series:



S (page E-11)



P1 (page E-11)

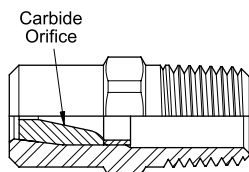
Orifice Size			Flow (gpm) at specified pressures (psi)											Flow (lpm) at specified pressures (bar)							
No.	in	mm	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000
2	.038	0.97	2.0	2.2	2.4	2.5	2.7	2.8	3.0	3.1	3.2	3.3	3.4	7.0	8.1	9.1	9.9	10.7	11.5	12.2	12.8
3	.042	1.07	2.4	2.7	2.9	3.1	3.3	3.4	3.6	3.8	3.9	4.1	4.2	8.6	9.9	11.1	12.1	13.1	14.0	14.9	15.7
4	.046	1.17	2.9	3.2	3.5	3.7	3.9	4.1	4.3	4.5	4.7	4.9	5.1	10.3	11.9	13.3	14.6	15.7	16.8	17.8	18.8
5	.055	1.40	4.2	4.6	4.9	5.3	5.6	5.9	6.2	6.5	6.7	7.0	7.2	14.7	17.0	19.0	20.8	22.5	24.0	25.5	26.9
6	.063	1.60	5.5	6.0	6.5	6.9	7.3	7.7	8.1	8.5	8.8	9.2	9.5	19.3	22.3	24.9	27.3	29.5	31.6	33.5	35.3
7	.067	1.70	6.2	6.8	7.3	7.8	8.3	8.8	9.2	9.6	10.0	10.4	10.7	21.9	25.2	28.2	30.9	33.4	35.7	37.9	39.9
8	.070	1.78	6.8	7.4	8.0	8.5	9.1	9.6	10.0	10.5	10.9	11.3	11.7	23.9	27.5	30.8	33.7	36.4	39.0	41.3	43.6
9	.073	1.85	7.3	8.0	8.7	9.3	9.9	10.4	10.9	11.4	11.8	12.3	12.7	25.9	30.0	33.5	36.7	39.6	42.4	44.9	47.4
10	.078	1.98	8.4	9.2	9.9	10.6	11.3	11.9	12.4	13.0	13.5	14.0	14.5	29.6	34.2	38.2	41.9	45.2	48.4	51.3	54.1
15	.093	2.36	11.9	13.1	14.1	15.1	16.0	16.9	17.7	18.5	19.2	20.0	20.7	42.1	48.6	54.4	59.5	64.3	68.8	72.9	76.9
20	.110	2.79	16.7	18.3	19.7	21.1	22.4	23.6	24.7	25.8	26.9	27.9	28.9	58.9	68.0	76.1	83.3	90.0	96.2	102.0	108.0

NOZZLES

UP TO 15,000 PSI (1000 BAR)



HHTC NOZZLES REPLACEABLE NOZZLE TIPS



- Tungsten carbide orifice inserts significantly outlast conventional nozzle orifice material
- Tapered geometry provides highly cohesive, distortion-free waterjets for concentrated, work saving cleaning and cutting power
- Enables more work to be done in less time
- Straight (0°) and fan patterns available
- 1/4" NPT Male connection*
- 15,000 psi (1000 bar) maximum working pressure

Used With:

DURASAFE™ HAND GUNS —

See pages C-1 – C-6



HHTC0 Straight Jet	
Part No.	Orifice Size
54113	000
54112	00
51819	0
52237	1
51291	2
51292	3
51293	4
51294	5
51295	6
51296	7
51297	8
51298	9
51299	10
51300	12
51301	14
51302	15
51303	20
51541	30



HHTC15 15° Fan Jet	
Part No.	Orifice Size
54139	0
51306	2
51307	3
51308	4
51309	5
51310	6
51311	7
51312	8
51313	9
51314	10
51315	12
51316	14
51317	15



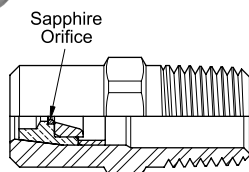
HHTC25 25° Fan Jet	
Part No.	Orifice Size
50873	4
50874	5
50875	6
50876	7
50877	8
50878	9
50879	10



HHTC50 50° Fan Jet	
Part No.	Orifice Size
50890	5
50891	6
50892	7
50893	8
50894	9
50895	10

For nozzle flow rates, see Carbide Orifices — Group A chart on page E-7.

HHS0 NOZZLES REPLACEABLE NOZZLE TIPS



- Precision honed sapphire orifice inserts are twice as durable as tungsten carbide
- Tapered orifice retainer provides highly cohesive, distortion-free waterjets for concentrated, work saving cleaning and cutting power
- Straight (0°) patterns
- 1/4" NPT Male connection*
- 15,000 psi (1000 bar) maximum working pressure

Used With:

DURASAFE™ HAND GUNS —

See pages C-1 – C-6



HHS0 Straight Jet	
Part No.	Orifice Size
52724	1
52726	2
52727	3
52728	4
52729	5

For nozzle flow rates, see Sapphire Orifices chart on page E-8.

* See details on all connection types beginning on page I-2.

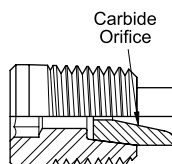
NOZZLES

UP TO 15,000 PSI (1000 BAR)



P4TC NOZZLES LOW PROFILE NOZZLE TIPS

- Low profile design for unobstructed pipe cleaning
- Tungsten carbide orifice inserts significantly outlast conventional nozzle orifice material
- Tapered geometry provides highly cohesive, distortion-free waterjets for concentrated, work saving cleaning and cutting power
- Straight (0°) patterns
- 1/4" NPT Male connection*
- 15,000 psi (1000 bar) maximum working pressure



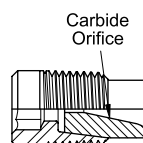
P4TC0 Straight Jet	
Part No.	Orifice Size
55041	000
55042	00
55043	0
55044	1
55045	2
55046	3
55047	4
55048	5
55049	6
55050	7
55051	8
55052	9
55053	10
55054	12
55055	14
55056	15
55057	20

Used With:
PIPE CLEANING NOZZLES —
See pages E-17 – E-18

For nozzle flow rates, see **Carbide Orifices — Group A** chart on page E-7.

P2TC NOZZLES LOW PROFILE NOZZLE TIPS

- Low profile design for unobstructed pipe cleaning
- Tungsten carbide orifice inserts significantly outlast conventional nozzle orifice material
- Tapered geometry provides highly cohesive, distortion-free waterjets for concentrated, work saving cleaning and cutting power
- Straight (0°) patterns
- 1/8" NPT Male connection*
- 15,000 psi (1000 bar) maximum working pressure



P2TC0 Straight Jet	
Part No.	Orifice Size
54688	000
54689	00
54691	0
54692	1
54693	2
54694	3
54696	4
54697	5
54698	6
54699	7
54701	8
54702	9
54703	10
54704	12
54706	14
54707	15
54708	20

Used With:
PIPE CLEANING NOZZLES —
See pages E-17 – E-18

For nozzle flow rates, see **Carbide Orifices — Group A** chart on page E-7.

NOZZLES

* See details on all connection types beginning on page I-2.

NOZZLES

UP TO 15,000 PSI (1000 BAR)



P1 NOZZLES

REPLACEABLE NOZZLE TIPS

- Low profile design for unobstructed pipe cleaning
- Stainless steel
- Precision drilled orifice
- Tapered geometry provides highly cohesive, distortion-free waterjets for concentrated, work saving cleaning and cutting power
- Straight (0°) patterns
- 1/16" NPT Male connection*
- 15,000 psi (1000 bar) maximum working pressure



For nozzle flow rates, see Steel Orifices chart on page E-8.

Used With:

PIPE CLEANING NOZZLES —

See pages E-17 – E-18

P1 Straight Jet	
Part No.	Orifice Size
J55741	2
J55742	3
J55743	4
J55744	5
J55745	6
J55746	7
J55747	8
J55748	9
J55749	10

P1S0 NOZZLES

FLUSH MOUNT NOZZLE TIPS

- Low profile design for unobstructed pipe cleaning
- Precision honed sapphire orifice inserts are twice as durable as tungsten carbide
- Tapered geometry provides highly cohesive, distortion-free waterjets for concentrated, work saving cleaning and cutting power
- Enables more work to be done in less time
- Straight (0°) patterns
- 1/16" NPT Male connection*
- 15,000 psi (1000 bar) maximum working pressure

Sapphire Orifice



For nozzle flow rates, see Sapphire Orifices chart on page E-8.

Used With:

PIPE CLEANING NOZZLES —

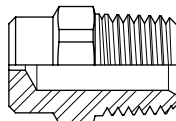
See pages E-17 – E-18

P1S0 Straight Jet	
Part No.	Orifice Size
54663	000
54664	00
54666	0
54667	1
54668	2
54669	3
54671	4
54672	5

S NOZZLES

REPLACEABLE NOZZLE TIPS

- Machined from heat treated stainless steel
- Tapered internal geometry provides cohesive, distortion-free waterjets
- Straight (0°) and fan patterns available
- 1/4" NPT Male connection*
- 15,000 psi (1000 bar) maximum working pressure



For nozzle flow rates, see Steel Orifices chart on page E-8.

Used With:

DURASAFE™ HAND GUNS —

See pages C-1 – C-6

* See details on all connection types beginning on page I-2.

S0 Straight Jet		S15 15° Fan Jet		S25 25° Fan Jet	
Part No.	Orifice Size	Part No.	Orifice Size	Part No.	Orifice Size
25830	2	25840	2	25884	4
25831	3	25841	3	25849	5
25832	4	25842	4	25850	6
25833	5	25843	5	25851	8
25834	6	25844	6	25852	10
25835	7	25845	7	25853	15
25836	8	25846	8	25876	20
25837	9	25847	9		
25838	10	25672	10		
25839	15	25848	15		
25877	20	25875	20		

NOZZLES

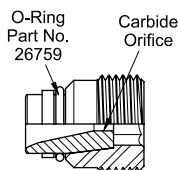
UP TO 15,000 PSI (1000 BAR)



RM NOZZLES

FLUSH MOUNT NOZZLE TIPS

- Flush mount design
- Tapered geometry provides highly cohesive, distortion-free waterjets for concentrated, work saving cleaning and cutting power
- Enables more work to be done in less time
- Straight (0°) patterns
- 1/2"-28UNEF male connection
- 20,000 psi (1400 bar) maximum working pressure



RM Straight Jet	
Part No.	Orifice Size
52689	000
52688	00
52452	0
52453	1
52454	2
52456	3
52457	4
52458	5
52459	6
52461	7
52462	8
52463	9
52464	10
52466	12
52467	14
52468	15
52469	20

Used With:

ROTOMAG™ — See pages E-13 – E-16

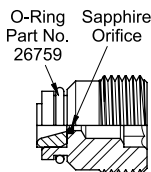
HYDROMOWER — See pages H-1 – H-4

For nozzle flow rates, see **Carbide Orifices — Group A** chart on page E-7.

RMS NOZZLES

FLUSH MOUNT NOZZLE TIPS

- Flush mount design
- Precision-honed sapphire orifice inserts are twice as durable as tungsten carbide
- Tapered orifice retainer provides highly cohesive, distortion-free waterjets for concentrated, work saving cleaning and cutting power
- Straight (0°) patterns
- 1/2"-28UNEF male connection
- 20,000 psi (1400 bar) maximum working pressure



RMS Straight Jet	
Part No.	Orifice Size
54884	000
54886	00
52731	0
52732	1
52733	2
52734	3
52736	4
52737	5

Used With:

ROTOMAG™ — See pages E-13 – E-16

HYDROMOWER — See pages H-1 – H-4

For nozzle flow rates, see **Sapphire Orifices** chart on page E-8.

NOZZLES

NOZZLES

UP TO 15,000 PSI (1000 BAR)

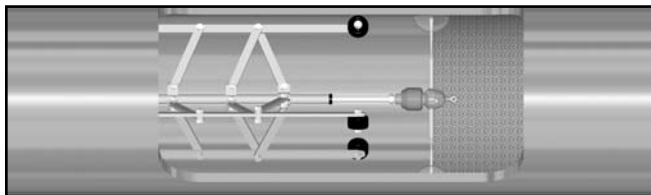
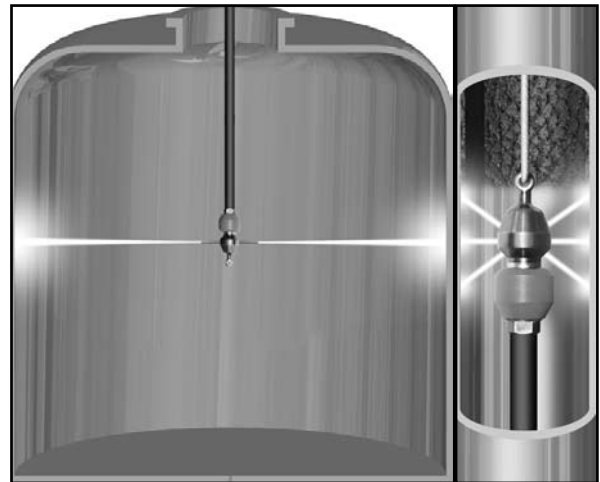


ROTOMAG™

2-D PIPE CLEANING NOZZLE

The Jetstream RotoMag is a self-powered rotating nozzle designed for cleaning stacks, sewer lines, drains, tanks, on-line boilers, and other large diameter pipes.

- Water provides the rotational motion and creates the bearing on which the nozzle spins. No drive belts or ball bearings to replace!
- Two nozzle patterns available
- Flush mounted nozzle inserts provide low profile for cleaning small pipes while extensions are available for larger pipes, allowing the RotoMag to clean pipes ranging from 3-1/2 inches to 18 feet in diameter
- Magnetic braking system controls rotational speed for minimal wear and maximum impact without streaking.
- Uses up to six flush mounted **RM Series** tungsten carbide nozzles or **RMS Series** sapphire nozzles
- Rebuild kit allows five-minute replacement of wear components right in the field using two standard hex wrenches
- Includes nozzle port plugs

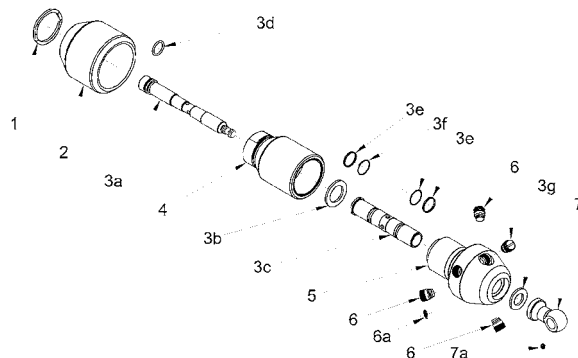


Part No.	Inlet Connection*	Speed Range	Pattern			Diameter		Assembly Length		Assembly Weight		Maximum Flow Rate		Maximum Operating Pressure	
			Forward Ports	Radial Ports	Rearward Ports										
52300	3/4" NPT Male	50-300	2	2	2	2.75	70	7.38	187	6	2.7	50	190	15,000	1000
54670	3/4" NPT Male	50-300	0	4	0	2.75	70	7.38	187	6	2.7	50	190	15,000	1000

* See details on all connection types beginning on page I-2.

Replacement Parts

Item	Part No.	Description
1	27072	Retaining Ring
2	52803	Shroud
3	52430	Rebuild Kit (Items 3a to 3g)
4	52315	Body
5	52310	Rotor (Part No. 52300)
	54665	Rotor (Part No. 54670)
6	52390	Plug
6a	26759	O-Ring
7	52386	Tow Ring
7a	26869	Setscrew



NOZZLES

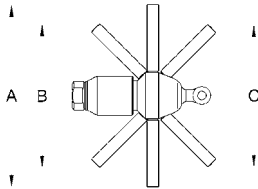
UP TO 15,000 PSI (1000 BAR)



ROTOMAG™ 2-D PIPE CLEANING NOZZLE ACCESSORIES

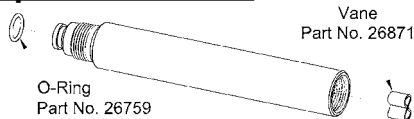
NOZZLE EXTENSIONS

- Available in three sizes
- Puts nozzles closer to the inner surface of large pipes for more effective cleaning



Part No.	Diameter "A"		Diameter "B"		Diameter "C"	
	in	mm	in	mm	in	mm
52320-05	5.0	127	4.3	109	4.3	109
52320-10	10.0	254	7.9	201	7.8	198
52320-15	15.0	381	11.4	290	11.3	287

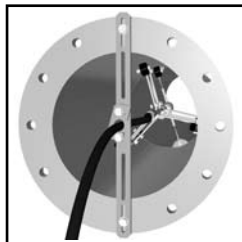
Replacement Parts



BACKOUT PREVENTERS

Backout preventers are safety devices that mount to pipe flanges to prevent pipe cleaning nozzles from backing out in the event of an unexpected and sudden shift in thrust that could result in injury to operators. Fits around hoses from 1/4" to 1" I.D.

Part No.	Flange Bolt Circle Diameter Range	
	in	mm
29124	5 – 15	13 – 38
54805	5 – 36	13 – 91



NOZZLE PLUGS

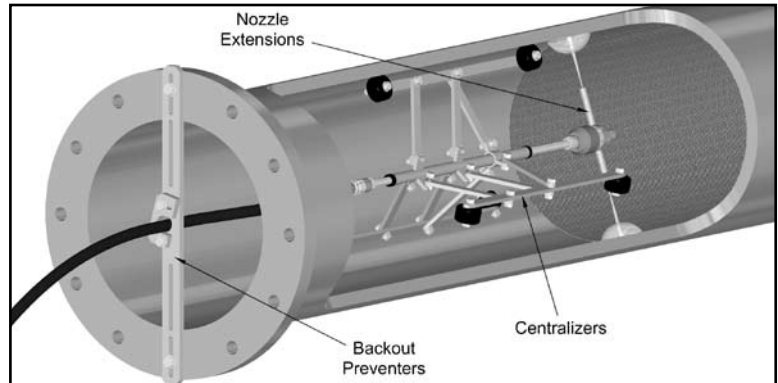
Used to close unused RotoMag nozzle ports.

Part No. 52390



Replacement Part

Part No. 26759 O-Ring

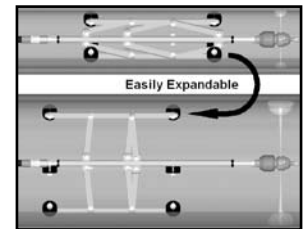


CENTRALIZERS

- Several models are available for a variety of applications
- Required for use of extensions in horizontal pipe runs
- Used with the the RotoMag to provide even, thorough cleaning and ease of movement

Six Wheel Adjustable

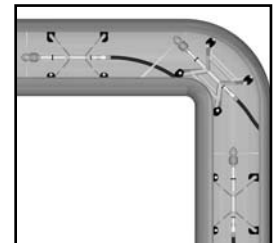
- Collapsible aluminum frame
- For straight pipe runs
- Durable plastic wheels
- Holds short, rigid lance for nozzle and hose attachment



Part No.	Inlet & Outlet Connections	Pipe Diameter Range		Weight	
		in	cm	lb	kg
JS-BJ286SP12	3/4" NPT Male	9 – 18	23 – 45	20	9.0
JS-BJ286MP12	3/4" NPT Male	13 – 40	33 – 101	32	15.0
JS-BJ286LP12	3/4" NPT Male	16 – 60	41 – 152	40	18.0

Eight Wheel Adjustable

- Zinc plated welded steel frame
- Handles bends in pipe runs
- Durable plastic wheels
- Holds short rigid lance for nozzle and hose attachment



Part No.	Inlet & Outlet Connections	Size Range		Weight	
		in	cm	lb	kg
JS-BJ288SP12	3/4" NPT Male	16 – 21	41 – 53	12	5.0
JS-BJ288MP12	3/4" NPT Male	22 – 29	56 – 74	13	6.0
JS-BJ288LP12	3/4" NPT Male	30 – 35	77 – 94	16	7.0

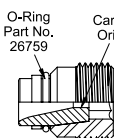
NOZZLES

NOZZLES

UP TO 15,000 PSI (1000 BAR)



ROTOMAG™ 2-D PIPE CLEANING NOZZLE

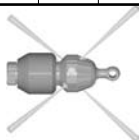


Six RM Nozzles in RotoMag

RM SERIES CARBIDE NOZZLES

- Precision honed carbide orifices
- Flush mount
- Select nozzles from the charts below by choosing operating pressure, desired flow, and two, four, or six nozzle operation

Part No.	Orifice Size	Flow (gpm) at specified pressures (psi)												Flow (lpm) at specified pressures (bar)									
		5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000			
52688	00	8.6	9.4	10.1	10.8	11.5	12.1	12.7	13.3	13.8	14.3	14.9	30.3	35.0	39.1	42.8	46.2	49.4	52.4	55.3			
52452	0	11.2	12.2	13.2	14.1	15.0	15.8	16.6	17.3	18.0	18.7	19.4	39.5	45.6	51.0	55.8	60.3	64.5	68.4	72.1			
52453	1	13.9	15.2	16.4	17.6	18.6	19.6	20.6	21.5	22.4	23.2	24.1	49.0	56.6	63.3	69.4	74.9	80.1	84.9	89.5			
52454	2	18.0	19.7	21.2	22.7	24.1	25.4	26.6	27.8	29.0	30.0	31.1	63.4	73.2	81.8	89.7	96.8	103.5	109.8	115.7			
52456	3	21.6	23.7	25.6	27.3	29.0	30.6	32.1	33.5	34.9	36.2	37.4	76.3	88.1	98.6	108.0	116.6	124.7	132.2	139.4			
52457	4	25.7	28.1	30.4	32.4	34.4	36.3	38.0	39.7	41.4	42.9	44.4	90.6	104.6	116.9	128.1	138.4	147.9	156.9	165.4			
52458	5	36.1	39.5	42.7	45.6	48.4	**	**	**	**	**	**	127.3	147.0	164.4	180.1	**	**	**	**			



Four RM Nozzles in RotoMag

Flow charts on this page are applicable only to the RotoMag nozzle which uses a portion of the water to provide a bearing for nozzle rotation.

Part No.	Orifice Size	Flow (gpm) at specified pressures (psi)											Flow (lpm) at specified pressures (bar)								
		5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000	
52688	00	6.2	6.8	7.3	7.8	8.3	8.8	9.2	9.6	10.0	10.4	10.7	21.8	25.2	28.2	30.9	33.4	35.7	37.8	39.9	
52452	0	7.9	8.7	9.4	10.0	10.6	11.2	11.8	12.3	12.8	13.3	13.7	28.0	32.3	36.1	39.6	42.7	45.7	48.5	51.1	
52453	1	9.7	10.7	11.5	12.3	13.1	13.8	14.4	15.1	15.7	16.3	16.9	34.4	39.7	44.4	48.6	52.5	56.1	59.5	62.7	
52454	2	12.4	13.6	14.7	15.7	16.7	17.6	18.5	19.3	20.1	20.8	21.5	43.9	50.7	56.7	62.1	67.1	71.7	76.1	80.2	
52456	3	14.9	16.3	17.6	18.8	20.0	21.1	22.1	23.1	24.0	24.9	25.8	52.6	60.7	67.9	74.3	80.3	85.8	91.0	96.0	
52457	4	17.6	19.3	20.8	22.2	23.6	24.9	26.1	27.2	28.3	29.4	30.4	62.0	71.6	80.1	87.7	94.8	101.3	107.5	113.3	
52458	5	24.5	26.9	29.0	31.0	32.9	34.7	36.4	38.0	39.5	41.0	42.5	86.6	99.9	111.7	122.4	132.2	141.3	149.9	158.0	
52459	6	31.7	34.8	37.5	40.1	42.6	44.9	47.1	49.1	**	**	**	112.0	129.3	144.6	158.4	171.1	182.9	**	**	
52461	7	35.7	39.1	42.2	45.2	47.9	**	**	**	**	**	**	126.0	145.5	162.7	178.2	**	**	**	**	
52462	8	38.8	42.5	45.9	49.1	**	**	**	**	**	**	**	137.1	158.3	177.0	**	**	**	**	**	



Two RM Nozzles in RotoMag

Part No.	Orifice Size	Flow (gpm) at specified pressures (psi)											Flow (lpm) at specified pressures (bar)								
		5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000	
52454	2	6.9	7.6	8.2	8.8	9.3	9.8	10.3	10.7	11.2	11.6	12.0	24.5	28.2	31.6	34.6	37.4	39.9	42.4	44.7	
52456	3	8.1	8.9	9.6	10.3	10.9	11.5	12.1	12.6	13.1	13.6	14.1	28.8	33.2	37.1	40.7	44.0	47.0	49.8	52.5	
52457	4	9.5	10.4	11.2	12.0	12.7	13.4	14.1	14.7	15.3	15.9	16.4	33.5	38.7	43.3	47.4	51.2	54.7	58.1	61.2	
52458	5	13.0	14.2	15.3	16.4	17.4	18.3	19.2	20.1	20.9	21.7	22.5	45.8	52.9	59.1	64.7	69.9	74.8	79.3	83.6	
52459	6	16.6	18.2	19.6	21.0	22.2	23.4	24.6	25.7	26.7	27.7	28.7	58.5	67.6	75.5	82.7	89.4	95.5	101.3	106.8	
52461	7	18.6	20.3	22.0	23.5	24.9	26.2	27.5	28.7	29.9	31.0	32.1	65.5	75.6	84.6	92.6	100.1	107.0	113.5	119.6	
52462	8	20.1	22.0	23.8	25.5	27.0	28.5	29.8	31.2	32.4	33.7	34.9	71.1	82.0	91.7	100.5	108.5	116.0	123.1	129.7	
52463	9	21.8	23.8	25.7	27.5	29.2	30.8	32.3	33.7	35.1	36.4	37.7	76.8	88.7	99.2	108.7	117.4	125.5	133.1	140.3	
52464	10	24.6	27.0	29.2	31.2	33.1	34.9	36.6	38.2	39.7	41.2	42.7	87.0	100.5	112.3	123.1	132.9	142.1	150.7	158.9	
52466	12	26.5	29.0	31.3	33.5	35.5	37.4	39.3	41.0	42.7	44.3	45.8	93.4	107.9	120.6	132.2	142.7	152.6	161.9	170.6	
52467	14	31.7	34.7	37.5	40.0	42.5	44.8	47.0	49.0	**	**	**	111.8	129.1	144.3	158.1	170.8	182.5	**	**	
52468	15	34.4	37.7	40.7	43.6	46.2	48.7	**	**	**	**	**	121.6	140.4	157.0	172.0	185.7	**	**	**	

NOZZLES

UP TO 15,000 PSI (1000 BAR)

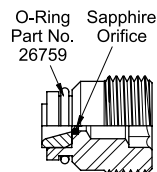


ROTOMAG™

2-D PIPE CLEANING NOZZLE

RMS SERIES SAPPHIRE NOZZLES

- High productivity sapphire nozzles designed for use in the RotoMag
- More durable than tungsten carbide for longer service life and lower operating cost
- Flush mount
- Select nozzles from the charts below by choosing operating pressure, desired flow, and two, four, or six nozzle operation



Flow charts on this page are applicable only to the RotoMag nozzle which uses a portion of the water to provide a bearing for nozzle rotation.

Six RMS Nozzles in RotoMag



Part No.	Orifice Size	Flow (gpm) at specified pressures (psi)											Flow (lpm) at specified pressures (bar)								
		5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000	
54886	00	6.7	7.4	7.9	8.5	9.0	9.5	10.0	10.4	10.8	11.2	11.6	23.7	27.4	30.6	33.5	36.2	38.7	41.1	43.3	
52731	0	8.6	9.5	10.2	10.9	11.6	12.2	12.8	13.4	13.9	14.5	15.0	30.5	35.3	39.4	43.2	46.6	49.9	52.9	55.8	
52732	1	10.7	11.7	12.6	13.5	14.3	15.1	15.8	16.5	17.2	17.8	18.5	37.6	43.4	48.6	53.2	57.5	61.4	65.2	68.7	
52733	2	13.7	15.0	16.2	17.3	18.3	19.3	20.3	21.2	22.0	22.9	23.7	48.3	55.7	62.3	68.2	73.7	78.8	83.6	88.1	
52734	3	16.4	17.9	19.4	20.7	22.0	23.2	24.3	25.4	26.4	27.4	28.4	57.8	66.8	74.7	81.8	88.4	94.5	100.2	105.6	
52736	4	19.4	21.2	22.9	24.5	26.0	27.4	28.7	30.0	31.2	32.4	33.5	68.4	79.0	88.3	96.7	104.5	111.7	118.5	124.9	
52737	5	24.4	26.7	28.8	30.8	32.7	34.4	36.1	37.7	39.3	40.8	42.2	86.0	99.3	111.0	121.6	131.4	140.4	149.0	157.0	

Four RMS Nozzles in RotoMag



Part No.	Orifice Size	Flow (gpm) at specified pressures (psi)											Flow (lpm) at specified pressures (bar)								
		5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000	
52731	0	6.2	6.8	7.4	7.9	8.4	8.8	9.3	9.7	10.1	10.4	10.8	22.0	25.4	28.4	31.1	33.6	36.0	38.1	40.2	
52732	1	7.6	8.3	9.0	9.6	10.2	10.7	11.2	11.7	12.2	12.7	13.1	26.7	30.9	34.5	37.8	40.9	43.7	46.3	48.8	
52733	2	9.6	10.5	11.3	12.1	12.9	13.6	14.2	14.8	15.5	16.0	16.6	33.8	39.1	43.7	47.8	51.7	55.3	58.6	61.8	
52734	3	11.4	12.5	13.5	14.4	15.3	16.1	16.9	17.6	18.4	19.1	19.7	40.2	46.4	51.9	56.9	61.4	65.7	69.7	73.4	
52736	4	13.4	14.7	15.8	16.9	18.0	18.9	19.9	20.7	21.6	22.4	23.2	47.3	54.6	61.0	66.8	72.2	77.2	81.9	86.3	
52737	5	16.7	18.3	19.8	21.1	22.4	23.6	24.8	25.9	26.9	28.0	28.9	59.0	68.1	76.2	83.4	90.1	96.3	102.2	107.7	

Two RMS Nozzles in RotoMag



Part No.	Orifice Size	Flow (gpm) at specified pressures (psi)											Flow (lpm) at specified pressures (bar)								
		5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000	
52733	2	5.5	6.0	6.5	7.0	7.4	7.8	8.2	8.5	8.9	9.2	9.5	19.4	22.4	25.1	27.5	29.7	31.7	33.6	35.4	
52734	3	6.4	7.0	7.6	8.1	8.6	9.1	9.5	9.9	10.3	10.7	11.1	22.6	26.1	29.2	32.0	34.5	36.9	39.2	41.3	
52736	4	7.4	8.1	8.8	9.4	9.9	10.5	11.0	11.5	11.9	12.4	12.8	26.1	30.2	33.7	36.9	39.9	42.7	45.2	47.7	
52737	5	9.1	9.9	10.7	11.5	12.2	12.8	13.4	14.0	14.6	15.2	15.7	32.0	36.9	41.3	45.3	48.9	52.3	55.4	58.4	

NOZZLES

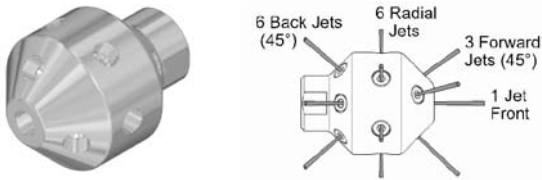
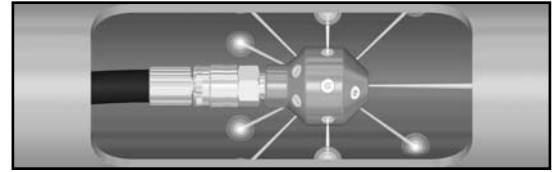
UP TO 15,000 PSI (1000 BAR)



PIPE CLEANING NOZZLES

Commonly called "pineapples," pipe cleaning nozzles are used for cleaning large diameter pipes (generally 4" or larger).

- Available in a variety of sizes and patterns
- Nozzle ports can be plugged to create several unique patterns to perform specific tasks (unplugging, flushing, etc.)
- Heat-treated stainless steel



Part No.	Connections*		Max Operating Pressure	
	Inlet	Nozzle	psi	bar
54184	3/4" NPT Fml	1/8" NPT Fml	15,000	1000

* See details on all connection types beginning on page I-2.



Part No.	Connections*		Max Operating Pressure	
	Inlet	Nozzle	psi	bar
50512	1/2" NPT Fml	1/4" NPT Fml	10,000	700

* See details on all connection types beginning on page I-2.

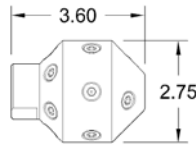
Use With:



P2TC Nozzles
See page E-10



Nozzle Port Plug
Plug unused nozzle ports
Part No. 26170



Dimensions shown in inches

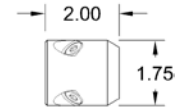
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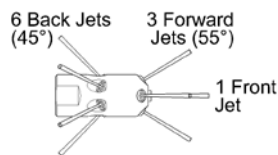
P4TC Nozzles
See page E-10



Nozzle Port Plug
Plug unused nozzle ports
Part No. 25392

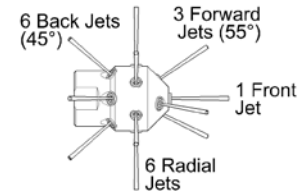


Dimensions shown in inches



Part No.	Connections*		Max Operating Pressure	
	Inlet	Nozzle	psi	bar
54165	3/4" NPT Fml	1/16" NPT Fml	15,000	1000

* See details on all connection types beginning on page I-2.



Part No.	Connections*		Max Operating Pressure	
	Inlet	Nozzle	psi	bar
54166	3/4" NPT Fml	1/16" NPT Fml	15,000	1000

* See details on all connection types beginning on page I-2.

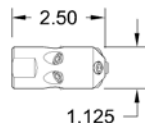
Use With:



P1S0 Nozzles
See page E-11



Nozzle Port Plug
Plug unused nozzle ports
Part No. 25395



Dimensions shown in inches

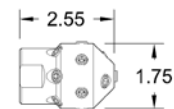
Use With:



P1S0 Nozzles
See page E-11



Nozzle Port Plug
Plug unused nozzle ports
Part No. 25395



Dimensions shown in inches

NOZZLES

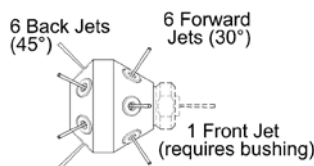
UP TO 15,000 PSI (1000 BAR)



PIPE CLEANING NOZZLES

Part No.	Connections*			Max Operating Pressure	
	Inlet	Front	Nozzle Port	psi	bar
51094	3/4" NPT Fml	3/4" NPT Fml	1/4" NPT Fml	10,000	700

* See details on all connection types beginning on page I-2.



Configurations & Accessories

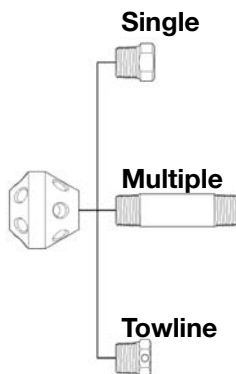
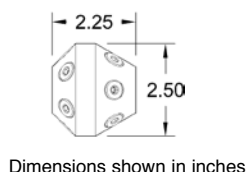
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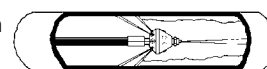
P4TC Nozzles
See page E-10



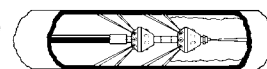
Nozzle Port Plug
Plug unused nozzle ports
Part No. 25392



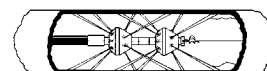
Reducing Bushing
Allows the connection of a nozzle to the front port
Part No. 26069



Nipple
Connect multiple pipe cleaning nozzles
Part No. 28875-04



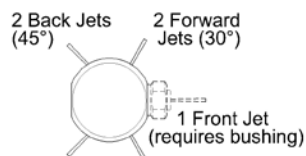
Towing Eye Plug
Use to pull nozzle through pipe
Part No. 51156



NOZZLES

Part No.	Connections*			Max Operating Pressure	
	Inlet	Front	Nozzle Port	psi	bar
51096	1/2" NPT Fml	1/2" NPT Fml	1/4" NPT Fml	10,000	700

* See details on all connection types beginning on page I-2.



Configurations & Accessories

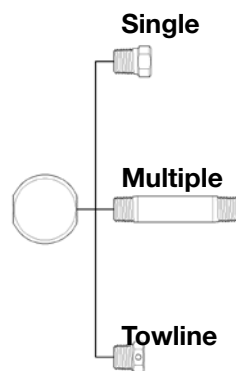
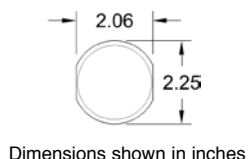
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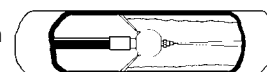
P4TC Nozzles
See page E-10



Nozzle Port Plug
Plug unused nozzle ports
Part No. 25392



Reducing Bushing
Allows the connection of a nozzle to the front port
Part No. 25904



Nipple
Connect multiple pipe cleaning nozzles
Part No. 55450-04



Towing Eye Plug
Use to pull nozzle through pipe
Part No. 51169



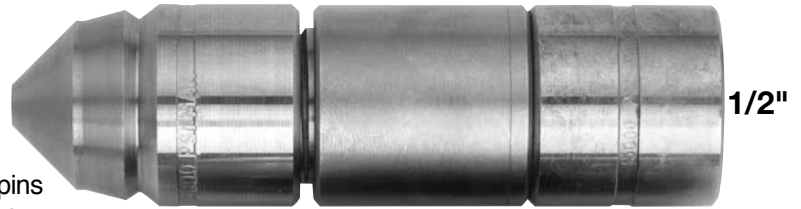
NOZZLES

UP TO 15,000 PSI (1000 BAR)



TUBE SPINNER™ TUBE CLEANING NOZZLES

- Provide the most thorough cleaning of tube walls
- Maximum impact without streaking
- Self-rotating, heat-treated stainless steel sleeve spins on a bearing of water and features two radial jets that spin at high speed for complete coverage
- Simple two-piece design
- Specially coated nozzle body for maximum lubricity
- Custom flow rates available for special applications
- Tube nozzles (FP nozzles shown) or blanks are used to cap the end of the nozzle (sold separately)
- Female pipe thread (NPT Fml) inlet, male pipe thread outlet (NPT Male)
- 15,000 psi (1000 bar) maximum working pressure



1/2"

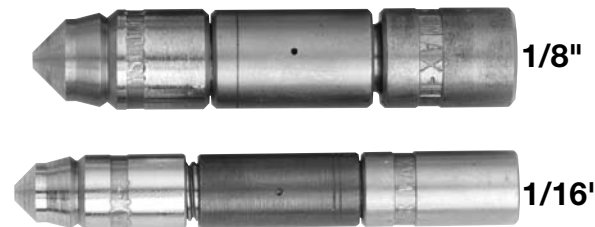


3/8"



1/4"

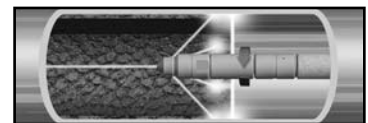
Part No.	Connections* Female Inlet x Male Outlet*	Flow Rate	Outside Diameter		Length w/ FP nozzle		Sleeve Part No. Replacement
			in	mm	in	mm	
52146	1/16" NPT	1	.375	9.5	2.47	63	52141
52147	1/16" NPT	2	.375	9.5	2.47	63	52142
51997	1/8" NPT	1	.500	12.7	2.41	61	51992
51998	1/8" NPT	2	.500	12.7	2.41	61	51993
52002	1/4" NPT	1	.665	16.9	2.89	73	51922
52003	1/4" NPT	2	.665	16.9	2.89	73	51923
52007	3/8" NPT	1	.875	22.2	3.05	77	51926
52008	3/8" NPT	2	.875	22.2	3.05	77	51927
52012	1/2" NPT	1	1.040	26.4	3.67	93	51941
52013	1/2" NPT	2	1.040	26.4	3.67	93	51942



1/8"

1/16"

Nozzles shown actual size. Shown with FP series cap nozzles, sold separately.



NOZZLES

Size* (NPT)	Flow Rate	Flow (gpm) at specified pressures (psi)**													Flow (lpm) at specified pressures (bar)**									
		3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	200	300	400	500	600	700	800	900	1000	
1/16"	1	1.9	2.3	2.6	2.9	3.2	3.5	3.7	4.0	4.2	4.5	4.7	4.9	5.1	7.1	9.1	10.8	12.3	13.8	15.2	16.5	17.8	19.0	
	2	3.0	3.5	4.0	4.4	4.8	5.2	5.6	5.9	6.2	6.6	6.9	7.2	7.5	11.1	13.9	16.3	18.6	20.6	22.6	24.4	26.2	27.9	
1/8"	1	2.6	3.1	3.5	3.9	4.3	4.7	5.0	5.4	5.7	6.0	6.4	6.7	7.0	9.5	12.1	14.5	16.6	18.6	20.5	22.4	24.2	25.9	
	2	5.0	5.9	6.7	7.4	8.0	8.7	9.3	9.9	10.4	11.0	11.5	12.0	12.5	18.7	23.4	27.4	31.1	34.5	37.7	40.7	43.6	46.4	
1/4"	1	2.4	2.9	3.4	3.8	4.2	4.6	5.0	5.4	5.8	6.1	6.5	6.8	7.2	8.9	11.6	14.0	16.3	18.5	20.6	22.6	24.6	26.6	
	2	5.2	6.2	7.0	7.8	8.5	9.2	9.9	10.6	11.2	11.8	12.4	13.0	13.5	19.5	24.5	28.9	33.0	36.8	40.3	43.8	47.0	50.2	
3/8"	1	3.6	4.3	4.9	5.5	6.1	6.6	7.2	7.7	8.2	8.7	9.2	9.6	10.1	13.3	17.1	20.4	23.6	26.5	29.4	32.1	34.8	37.3	
	2	7.0	8.2	9.3	10.4	11.3	12.2	13.1	14.0	14.8	15.5	16.3	17.1	17.8	26.1	32.7	38.5	43.8	48.7	53.3	57.7	61.9	65.9	
1/2"	1	3.0	3.7	4.3	4.9	5.5	6.1	6.6	7.1	7.7	8.2	8.7	9.2	9.7	11.3	14.8	18.2	21.3	24.4	27.3	30.2	33.0	35.8	
	2	6.7	7.9	9.0	10.0	11.0	12.0	12.9	13.7	14.6	15.4	16.2	17.0	17.8	24.7	31.3	37.2	42.6	47.7	52.5	57.1	61.6	65.9	

* See details on all connection types beginning on page I-2.

** Flow rates do not include the additional flow of the tube nozzle used as a cap.

Related Items

FP NOZZLES — See pages E-21 – E-22

NOZZLES

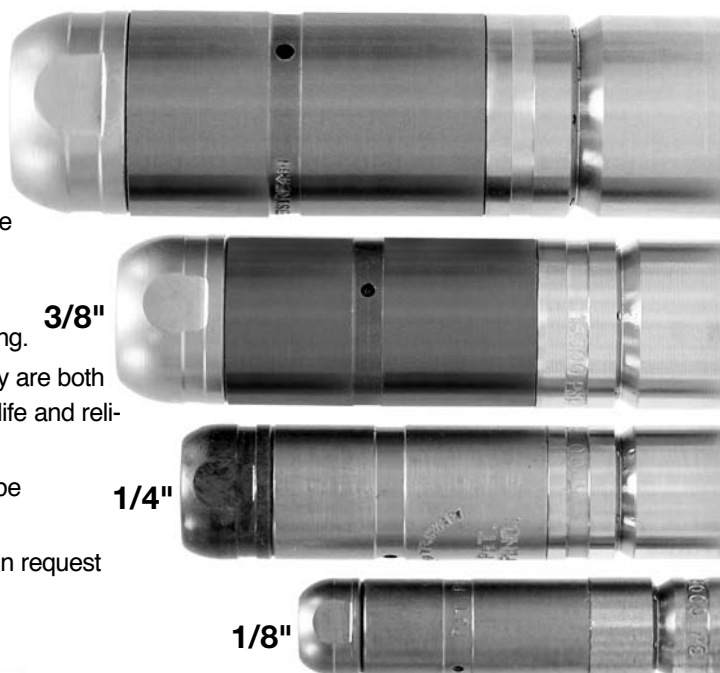
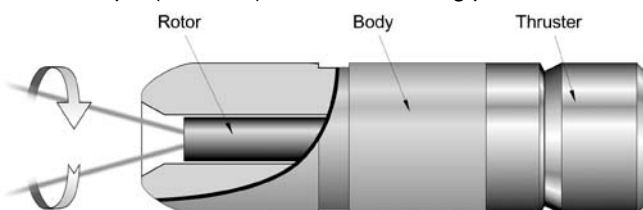
UP TO 15,000 PSI (1000 BAR)



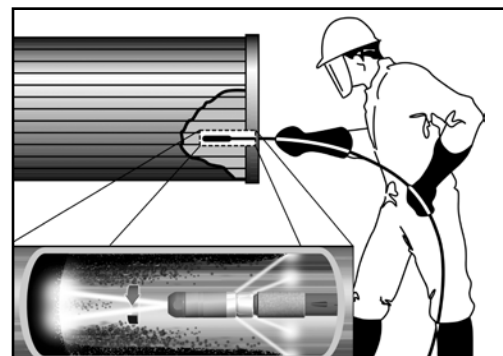
DRIL-JET™ TUBE CLEANING NOZZLES

Dril-Jet Tube Cleaning Nozzles are specially designed for cleaning plugged tubes. An internal rotor features two spinning front jets to drill through tube blockages while non-rotating rear jets flush debris and generate thrust to pull nozzle and lance through tube.

- No external moving parts
- No ball bearings to replace! Rotor spins on water bearing.
- Precisely ground rotor and precision honed nozzle body are both made from stainless steel and hardened for maximum life and reliability
- Dril-Jet outside diameters are the same as standard tube cleaning nozzles
- Custom flow rates or rear jet patterns are available upon request
- 15,000 psi (1000 bar) maximum working pressure



Nozzles shown actual size.



Part No.	Connections*	Outside Diameter		Length	
		in	mm	in	mm
52850	1/8" NPT Fml	.500	12.7	2.10	53
52930	1/4" NPT Fml	.660	16.7	2.70	69
52855	3/8" NPT Fml	.875	22.2	3.11	79
52865	1/2" NPT Fml	1.040	26.4	3.61	92

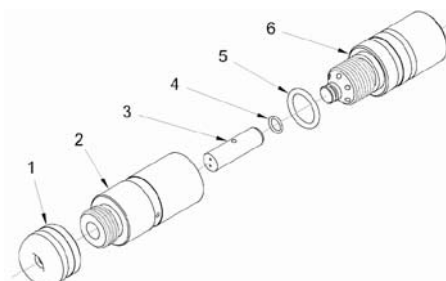
* See details on all connection types beginning on page I-2.

Part No.	Flow (gpm) at specified pressures (psi)												Flow (lpm) at specified pressures (bar)							
	4,000	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000
52850	3.2	3.6	4.0	4.3	4.6	4.8	5.1	5.3	5.6	5.8	6.0	6.2	12.7	14.7	16.4	18.0	19.4	20.8	22.1	23.2
52930	5.7	6.4	7.0	7.5	8.0	8.5	9.0	9.4	9.9	10.3	10.6	11.0	22.5	25.9	29.0	31.8	34.3	36.7	38.9	41.0
52855	8.7	9.8	10.7	11.5	12.3	13.1	13.8	14.5	15.1	15.7	16.3	16.9	34.5	39.8	44.5	48.7	52.6	56.3	59.7	62.9
52865	12.5	14.0	15.3	16.6	17.7	18.8	19.8	20.8	21.7	22.6	23.4	24.2	49.4	57.1	63.8	69.9	75.5	80.7	85.6	90.3

Replacement Parts

Item	Description	Replacement Part No.			
		1/8"	1/4"	3/8"	1/2"
1	Cap	53113	53187	53168	53098
2	Body	52847	52957	52848	52858
3	Rotor	52852	52954	52854	52859
4	O-Ring**	27112	27187	27113	25333
5	O-Ring**	27111	25610	25193	25787
6	Thruster**	52849	52952	52851	52857

** Both o-rings (items 4 and 5) are included with thruster (item 6).



NOZZLES

UP TO 15,000 PSI (1000 BAR)



TUBE CLEANING NOZZLES SELECTION & PART NUMBERING

Use the part numbering instructions and flow chart on this page for ordering tube nozzles from pages E-22 to E-30.

Nozzle Part Numbering

Example Part Number: **FP 3 4 - 7**

NOZZLE SERIES

FP EX MS
MP E C
FPC FPT TP

SIZE

From left column of nozzle size and pattern charts (Pages E-22 – E-30)

PATTERN

Specify number corresponding to desired pattern from nozzle size and pattern charts. (Pages E-22 – E-30)

FLOW RATING

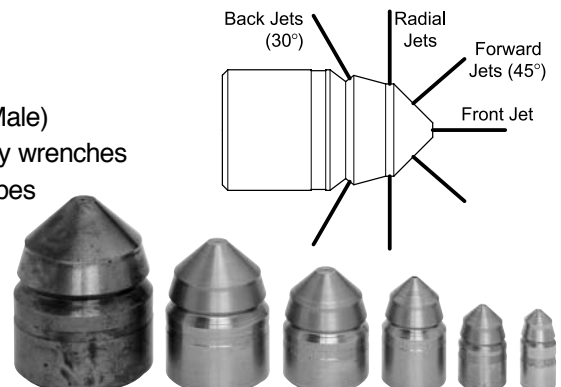
Find the flow rate number that most closely matches the desired flow and pressure from chart below. **Example:** a flow rate number of 7 will flow 6.6 gpm at 6,000 psi.

HYPHEN

Flow Rate	Flow (gpm) at specified pressures (psi)														Flow (lpm) at specified pressures (bar)									
	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	200	300	400	500	600	700	800	900	1000	
2	1.2	1.5	1.7	1.9	2.1	2.3	2.4	2.6	2.7	2.9	3.0	3.1	3.2	3.3	5.5	6.8	7.8	8.8	9.6	10.4	11.1	11.8	12.4	
3	1.5	1.8	2.1	2.4	2.6	2.8	3.0	3.2	3.3	3.5	3.7	3.8	4.0	4.1	6.8	8.3	9.6	10.7	11.7	12.7	13.5	14.4	15.1	
4	1.8	2.2	2.6	2.9	3.2	3.4	3.7	3.9	4.1	4.3	4.5	4.7	4.8	5.0	8.3	10.2	11.7	13.1	14.4	15.5	16.6	17.6	18.6	
5	2.6	3.1	3.6	4.0	4.4	4.8	5.1	5.4	5.7	6.0	6.3	6.5	6.8	7.0	11.6	14.2	16.4	18.4	20.1	21.7	23.2	24.6	26.0	
6	3.3	4.1	4.7	5.2	5.7	6.2	6.6	7.0	7.4	7.8	8.1	8.4	8.7	9.1	15.0	18.4	21.2	23.7	26.0	28.1	30.0	31.8	33.5	
7	3.8	4.7	5.4	6.0	6.6	7.1	7.6	8.1	8.5	8.9	9.3	9.7	10.1	10.4	17.2	21.1	24.4	27.2	29.8	32.2	34.5	36.6	38.5	
8	4.1	5.1	5.9	6.6	7.2	7.8	8.3	8.8	9.3	9.7	10.2	10.6	11.0	11.4	18.8	23.0	26.6	29.7	32.6	35.2	37.6	39.9	42.1	
9	4.5	5.5	6.4	7.1	7.8	8.4	9.0	9.6	10.1	10.6	11.1	11.5	11.9	12.4	20.5	25.1	28.9	32.3	35.4	38.3	40.9	43.4	45.7	
10	5.2	6.3	7.3	8.1	8.9	9.6	10.3	10.9	11.5	12.1	12.6	13.1	13.6	14.1	23.4	28.6	33.0	36.9	40.4	43.7	46.7	49.5	52.2	
12	5.6	6.8	7.9	8.8	9.6	10.4	11.1	11.8	12.4	13.0	13.6	14.2	14.7	15.2	25.2	30.8	35.6	39.8	43.6	47.1	50.4	53.4	56.3	
14	6.7	8.2	9.5	10.6	11.6	12.5	13.4	14.2	15.0	15.7	16.4	17.1	17.7	18.4	30.4	37.2	43.0	48.1	52.7	56.9	60.8	64.5	68.0	
15	7.3	9.0	10.4	11.6	12.7	13.7	14.6	15.5	16.4	17.2	17.9	18.7	19.4	20.1	33.2	40.7	47.0	52.5	57.5	62.1	66.4	70.4	74.2	
20	10.2	12.5	14.5	16.2	17.7	19.2	20.5	21.7	22.9	24.0	25.1	26.1	27.1	28.1	46.4	56.9	65.7	73.4	80.4	86.9	92.9	98.5	104.0	
40	13.2	16.2	18.7	20.9	22.9	24.7	26.5	28.1	29.6	31.0	32.4	33.7	35.0	36.2	60.0	73.5	84.8	94.8	104.0	112.0	120.0	127.0	134.0	

TUBE CLEANING NOZZLES SERIES FP

- For use with flex or rigid lances that have male pipe threads (NPT Male)
- Recessed orifices for protection from surface abrasion or damage by wrenches
- Double-tapered nose for fast, unrestricted travel through plugged tubes
- Machined from heat-treated stainless steel
- Maximum working pressure: 15,000 psi (1000 bar)
- Six sizes, seven standard patterns, and fourteen flow ratings (see the following page)
- Custom patterns available



NOZZLES






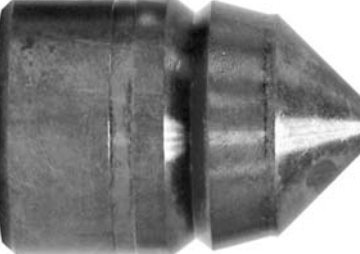
UP TO 15,000 PSI (1000 BAR)



TUBE CLEANING NOZZLES

SERIES FP

See page E-21 for ordering instructions.

<div> <div>PATTERNS</div> <div>SIZES Shown Actual Size</div> </div>	1	2	3	4	5	6	7
	For FLEX or RIGID Lance	For FLEX or RIGID Lance	For FLEX or RIGID Lance	For FLEX or RIGID Lance	For RIGID Lance ONLY	For RIGID Lance ONLY	For RIGID Lance ONLY
FP1 — 1/16" NPT Fml*  Diameter .375" (9.5 mm) Length .85" (21.6 mm)	1 Front 6 Back 30° 7 Jets Total Min Flow #2	1 Front 12 Back 30° 13 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Back 30° 10 Jets Total Min Flow #4	1 Front 3 Forward 45° 8 Back 30° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Radial 6 Back 30° 16 Jets Total Min Flow #6	1 Front 6 Radial 7 Jets Total Min Flow #2	1 Front 12 Radial 13 Jets Total Min Flow #5
FP3 — 1/8" NPT Fml*  Diameter .500" (12.7 mm) Length .88" (22.4 mm)	1 Front 6 Back 30° 7 Jets Total Min Flow #2	1 Front 12 Back 30° 13 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Back 30° 10 Jets Total Min Flow #4	1 Front 3 Forward 45° 8 Back 30° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Radial 6 Back 30° 16 Jets Total Min Flow #6	1 Front 6 Radial 7 Jets Total Min Flow #2	1 Front 12 Radial 13 Jets Total Min Flow #5
FP4 — 1/4" NPT Fml*  Diameter .665" (16.9 mm) Length 1.16" (29.5 mm)	1 Front 8 Back 30° 9 Jets Total Min Flow #4	1 Front 16 Back 30° 17 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Back 30° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 12 Back 30° 16 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Radial 8 Back 30° 20 Jets Total Min Flow #7	1 Front 8 Radial 9 Jets Total Min Flow #4	1 Front 16 Radial 17 Jets Total Min Flow #6
FP5 — 3/8" NPT Fml*  Diameter .875" (22.2 mm) Length 1.20" (30.5 mm)	1 Front 8 Back 30° 9 Jets Total Min Flow #4	1 Front 16 Back 30° 17 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Back 30° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 12 Back 30° 16 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Radial 8 Back 30° 20 Jets Total Min Flow #7	1 Front 8 Radial 9 Jets Total Min Flow #4	1 Front 16 Radial 17 Jets Total Min Flow #6
FP6 — 1/2" NPT Fml*  Diameter 1.040" (26.4 mm) Length 1.47" (37.3 mm)	1 Front 8 Back 30° 9 Jets Total Min Flow #4	1 Front 16 Back 30° 17 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Back 30° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 12 Back 30° 16 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Radial 8 Back 30° 20 Jets Total Min Flow #7	1 Front 8 Radial 9 Jets Total Min Flow #4	1 Front 16 Radial 17 Jets Total Min Flow #6
FP7 — 3/4" NPT Fml*  Diameter 1.375" (34.9 mm) Length 1.87" (47.5 mm)	1 Front 8 Back 30° 9 Jets Total Min Flow #4	1 Front 16 Back 30° 17 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Back 30° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 12 Back 30° 16 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Radial 8 Back 30° 20 Jets Total Min Flow #7	1 Front 8 Radial 9 Jets Total Min Flow #4	1 Front 16 Radial 17 Jets Total Min Flow #6

* See details on all connection types beginning on page I-2.

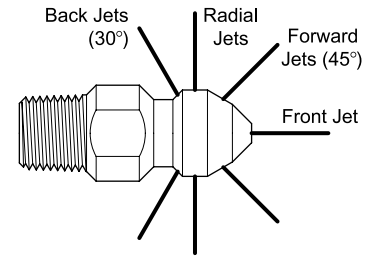
NOZZLES

UP TO 15,000 PSI (1000 BAR)



TUBE CLEANING NOZZLES SERIES MP

- Specifically for use with rigid lances that have female pipe threads (NPT Fml)
- Recessed orifices for protection from surface abrasion or damage by wrenches
- Double-tapered nose for fast, unrestricted travel through plugged tubes
- Machined from heat-treated stainless steel
- Maximum working pressure: 15,000 psi (1000 bar)
- Four sizes, seven standard patterns and fourteen flow ratings
- See page E-21 for flow ratings and ordering instructions
- Custom patterns available



<div>NOZZLES</div> <div> PATTERNS SIZES Shown Actual Size </div>	1	2	3	4	5	6	7
MP1 — 1/16" NPT Male* Diameter .375" (9.5 mm) Length .96" (24.4 mm)	1 Front 6 Back 30° 7 Jets Total Min Flow #2	1 Front 12 Back 30° 13 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Back 30° 10 Jets Total Min Flow #4	1 Front 3 Forward 45° 8 Back 30° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Radial 6 Back 30° 16 Jets Total Min Flow #6	1 Front 6 Radial 7 Jets Total Min Flow #2	1 Front 12 Radial 13 Jets Total Min Flow #5
MP2 — 1/8" NPT Male* Diameter .500" (12.7 mm) Length 1.21" (30.7 mm)	1 Front 8 Back 30° 9 Jets Total Min Flow #4	1 Front 16 Back 30° 17 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Back 30° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 12 Back 30° 16 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Radial 8 Back 30° 20 Jets Total Min Flow #7	1 Front 8 Radial 9 Jets Total Min Flow #4	1 Front 16 Radial 17 Jets Total Min Flow #6
MP3 — 1/4" NPT Male* Diameter .625" (15.9 mm) Length 1.43" (36.3 mm)	1 Front 8 Back 30° 9 Jets Total Min Flow #4	1 Front 16 Back 30° 17 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Back 30° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 12 Back 30° 16 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Radial 8 Back 30° 20 Jets Total Min Flow #7	1 Front 8 Radial 9 Jets Total Min Flow #4	1 Front 16 Radial 17 Jets Total Min Flow #6
MP4 — 3/8" NPT Male* Diameter .75" (19.1 mm) Length 1.60" (40.6 mm)	1 Front 8 Back 30° 9 Jets Total Min Flow #4	1 Front 16 Back 30° 17 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Back 30° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 12 Back 30° 16 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Radial 8 Back 30° 20 Jets Total Min Flow #7	1 Front 8 Radial 9 Jets Total Min Flow #4	1 Front 16 Radial 17 Jets Total Min Flow #6

* See details on all connection types beginning on page I-2.

Related Items

RIGID LANCES, MALE X FEMALE PIPE THREADS — See page D-10

NOZZLES

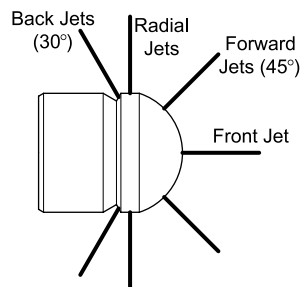
UP TO 15,000 PSI (1000 BAR)








TUBE CLEANING NOZZLES

SERIES FPC

- For use with flex or rigid lances that have male pipe threads (NPT Male)
- Ultra-compact design ideal for getting around sharp bends in tube
- Orifices recessed for protection from surface abrasion or damage by wrenches
- Machined from heat-treated stainless steel
- Maximum working pressure: 15,000 psi (1000 bar)
- Five sizes, seven standard patterns and fourteen flow ratings
- See page E-21 for flow ratings and ordering instructions
- Custom patterns available



<div> <div>PATTERNS</div> <div>SIZES Shown Actual Size</div> </div>	1	2	3	4	5	6	7
	For FLEX or RIGID Lance	For FLEX or RIGID Lance	For FLEX or RIGID Lance	For FLEX or RIGID Lance	For RIGID Lance ONLY	For RIGID Lance ONLY	For RIGID Lance ONLY
FPC1 — 1/16" NPT Fml*  Diameter .370" (9.4 mm) Length .51" (13.0 mm)	1 Front 6 Back 30° 7 Jets Total Min Flow #2	1 Front 12 Back 30° 13 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Back 30° 10 Jets Total Min Flow #4	1 Front 3 Forward 45° 8 Back 30° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Radial 6 Back 30° 16 Jets Total Min Flow #6	1 Front 6 Radial 7 Jets Total Min Flow #2	1 Front 12 Radial 13 Jets Total Min Flow #5
FPC3 — 1/8" NPT Fml*  Diameter .500" (12.7 mm) Length .58" (14.7 mm)	1 Front 6 Back 30° 7 Jets Total Min Flow #2	1 Front 12 Back 30° 13 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Back 30° 10 Jets Total Min Flow #4	1 Front 3 Forward 45° 8 Back 30° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Radial 6 Back 30° 16 Jets Total Min Flow #6	1 Front 6 Radial 7 Jets Total Min Flow #2	1 Front 12 Radial 13 Jets Total Min Flow #5
FPC4 — 1/4" NPT Fml*  Diameter .620" (15.7 mm) Length .75" (19.1 mm)	1 Front 8 Back 30° 9 Jets Total Min Flow #4	1 Front 16 Back 30° 17 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Back 30° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 12 Back 30° 16 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Radial 8 Back 30° 20 Jets Total Min Flow #7	1 Front 8 Radial 9 Jets Total Min Flow #4	1 Front 16 Radial 17 Jets Total Min Flow #6
FPC5 — 3/8" NPT Fml*  Diameter .870" (22.1 mm) Length .88" (22.4 mm)	1 Front 8 Back 30° 9 Jets Total Min Flow #4	1 Front 16 Back 30° 17 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Back 30° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 12 Back 30° 16 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Radial 8 Back 30° 20 Jets Total Min Flow #7	1 Front 8 Radial 9 Jets Total Min Flow #4	1 Front 16 Radial 17 Jets Total Min Flow #6
FPC6 — 1/2" NPT Fml*  Diameter 1.00" (25.4 mm) Length 1.00" (25.4 mm)	1 Front 8 Back 30° 9 Jets Total Min Flow #4	1 Front 16 Back 30° 17 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Back 30° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 12 Back 30° 16 Jets Total Min Flow #6	1 Front 3 Forward 45° 8 Radial 8 Back 30° 20 Jets Total Min Flow #7	1 Front 8 Radial 9 Jets Total Min Flow #4	1 Front 16 Radial 17 Jets Total Min Flow #6

* See details on all connection types beginning on page I-2.

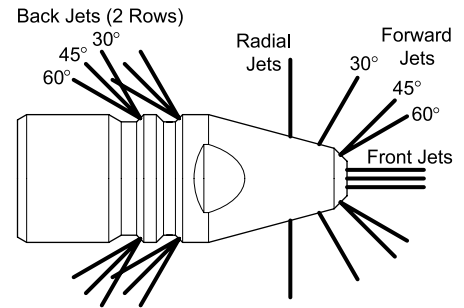
NOZZLES





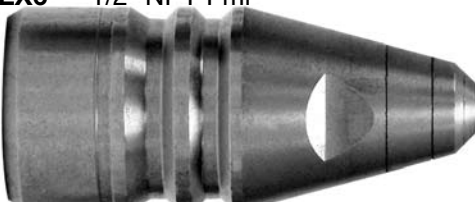
UP TO 15,000 PSI (1000 BAR)



TUBE CLEANING NOZZLES SERIES EX

- For use with flex or rigid lances that have male pipe threads (NPT Male)
- Features long, tapered nose for penetrating front jets and two rows of recessed rear jets for flushing, polishing and pulling
- Wrench flats for easy installation and removal
- Machined from heat-treated stainless steel
- Maximum working pressure: 15,000 psi (1000 bar)
- Five sizes, five standard patterns and fourteen flow ratings (eleven for standard patterns)
- See page E-21 for flow ratings and ordering instructions
- Custom patterns available



PATTERNS		1	2	3	4	5
SIZES Shown Actual Size		For FLEX or RIGID Lance	For FLEX or RIGID Lance	For FLEX or RIGID Lance	For FLEX or RIGID Lance	For FLEX or RIGID Lance
EX1 — 1/16" NPT Fml*	 Diameter .375" (9.5 mm) Length 1.29" (32.8 mm)	1 Front 3 Forward 45° 4 Radial 8 Back 30° 16 Jets Total Min Flow #6	3 Front 6 Radial 8 Back 30° 17 Jets Total Min Flow #6	1 Front 3 Forward 60° 3 Radial 6 Back 60° 13 Jets Total Min Flow #5	2 Front 2 Forward 60° 4 Forward 30° 10 Back 30° 18 Jets Total Min Flow #6	1 Front 3 Forward 45° 3 Forward 30° 6 Back 30° 6 Back 60° 19 Jets Total Min Flow #6
EX3 — 1/8" NPT Fml*	 Diameter .500" (12.7 mm) Length 1.45" (36.8 mm)	1 Front 4 Forward 45° 8 Radial 10 Back 30° 23 Jets Total Min Flow #8	4 Front 6 Radial 10 Back 30° 20 Jets Total Min Flow #7	3 Front 3 Forward 60° 4 Radial 8 Back 60° 18 Jets Total Min Flow #6	2 Front 2 Forward 60° 6 Forward 30° 12 Back 45° 22 Jets Total Min Flow #8	1 Front 3 Forward 45° 3 Forward 30° 8 Back 30° 6 Back 60° 21 Jets Total Min Flow #7
EX4 — 1/4" NPT Fml*	 Diameter .665" (16.9 mm) Length 1.72" (43.7 mm)	1 Front 6 Forward 45° 8 Radial 16 Back 30° 31 Jets Total Min Flow #12	4 Front 8 Radial 12 Back 30° 24 Jets Total Min Flow #9	4 Front 4 Forward 60° 8 Radial 12 Back 60° 28 Jets Total Min Flow #10	3 Front 3 Forward 60° 8 Forward 30° 16 Back 45° 30 Jets Total Min Flow #12	1 Front 4 Forward 45° 4 Forward 30° 8 Back 30° 6 Back 60° 23 Jets Total Min Flow #8
EX5 — 3/8" NPT Fml*	 Diameter .875" (22.2 mm) Length 2.21" (56.1 mm)	1 Front 6 Forward 45° 8 Radial 16 Back 30° 31 Jets Total Min Flow #12	4 Front 8 Radial 16 Back 30° 28 Jets Total Min Flow #10	4 Front 4 Forward 60° 8 Radial 12 Back 60° 28 Jets Total Min Flow #10	3 Front 3 Forward 60° 8 Forward 30° 16 Back 45° 30 Jets Total Min Flow #12	1 Front 4 Forward 45° 4 Forward 30° 8 Back 30° 6 Back 60° 23 Jets Total Min Flow #8
EX6 — 1/2" NPT Fml*	 Diameter 1.040" (26.4 mm) Length 2.37" (60.2 mm)	1 Front 6 Forward 45° 8 Radial 16 Back 30° 31 Jets Total Min Flow #12	4 Front 8 Radial 16 Back 30° 28 Jets Total Min Flow #10	4 Front 4 Forward 60° 8 Radial 12 Back 60° 28 Jets Total Min Flow #10	4 Front 4 Forward 60° 8 Forward 30° 24 Back 45° 40 Jets Total Min Flow #15	1 Front 4 Forward 45° 4 Forward 30° 8 Back 30° 6 Back 60° 23 Jets Total Min Flow #9

* See details on all connection types beginning on page I-2.

NOZZLES

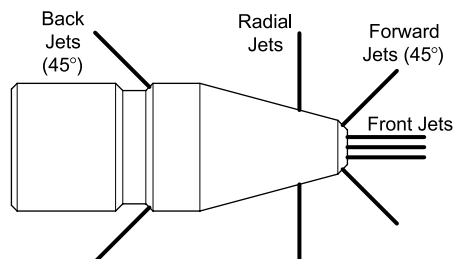
UP TO 15,000 PSI (1000 BAR)








TUBE CLEANING NOZZLES

SERIES E

- For use with flex or rigid lances that have male pipe threads (NPT Male)
- Features long, tapered nose for penetrating fouled tubes
- Machined from heat-treated stainless steel
- Maximum working pressure: 15,000 psi (1000 bar)
- Five sizes, two standard patterns and fourteen flow ratings (eleven for standard patterns)
- See page E-21 for flow ratings and ordering instructions
- Custom patterns available



PATTERNS		1	2
SIZES Shown Actual Size		For FLEX or RIGID Lance	For FLEX or RIGID Lance
E0 — 1/16" NPT Fml*  Diameter .375" (9.5 mm) Length 1.17" (29.7 mm)		1 Front 3 Forward 45° 4 Radial 6 Back 45° 14 Jets Total Min Flow #5	4 Front 6 Radial 8 Back 45° 18 Jets Total Min Flow #6
E1 — 1/8" NPT Fml*  Diameter .500" (12.7 mm) Length 1.40" (35.6 mm)		1 Front 3 Forward 45° 6 Radial 6 Back 45° 16 Jets Total Min Flow #6	4 Front 6 Radial 12 Back 45° 22 Jets Total Min Flow #8
E2 — 1/4" NPT Fml*  Diameter .665" (16.9 mm) Length 1.76" (44.7 mm)		1 Front 3 Forward 45° 6 Radial 6 Back 45° 16 Jets Total Min Flow #6	4 Front 6 Radial 12 Back 45° 22 Jets Total Min Flow #8
E3 — 3/8" NPT Fml*  Diameter .870" (22.1 mm) Length 2.10" (53.3 mm)		1 Front 3 Forward 45° 8 Radial 8 Back 45° 20 Jets Total Min Flow #7	4 Front 8 Radial 16 Back 45° 28 Jets Total Min Flow #10
E4 — 1/2" NPT Fml*  Diameter 1.040" (26.4 mm) Length 2.27" (57.7 mm)		1 Front 3 Forward 45° 8 Radial 8 Back 45° 20 Jets Total Min Flow #7	4 Front 8 Radial 16 Back 45° 28 Jets Total Min Flow #10

* See details on all connection types beginning on page I-2.

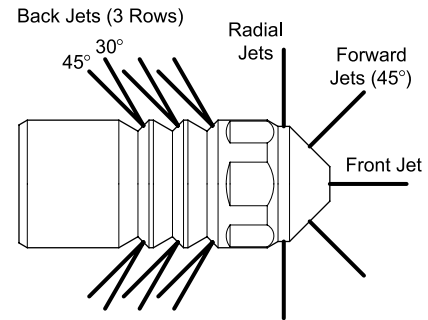
NOZZLES

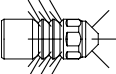
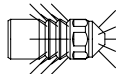
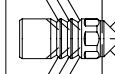
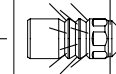





UP TO 15,000 PSI (1000 BAR)



TUBE CLEANING NOZZLES SERIES FPT

- For use with flex or rigid lances that have male pipe threads (NPT Male)
- Features three rows of rearward facing jets for powerful polishing and flushing
- Wrench flats for easy installation and removal
- Machined from heat-treated stainless steel
- Maximum working pressure: 15,000 psi (1000 bar)
- Five sizes, four standard patterns and fourteen flow ratings (ten for standard patterns)
- See page E-21 for flow ratings and ordering instructions
- Custom patterns available



<div>NOZZLES</div> <div> PATTERNS SIZES Shown Actual Size </div>				
	1	2	3	4
				
	For FLEX or RIGID Lance	For FLEX or RIGID Lance	For FLEX or RIGID Lance	For FLEX or RIGID Lance
FPT1 — 1/16" NPT Fml*	1 Front 2 Forward 45° 12 Back 30° 15 Jets Total	1 Front 3 Forward 45° 12 Back 45° 16 Jets Total	1 Front 2 Forward 45° 4 Radial 9 Back 30° 16 Jets Total	1 Front 2 Forward 45° 4 Radial 9 Back 45° 16 Jets Total
	Min Flow #6	Min Flow #6	Min Flow #6	Min Flow #6
FPT3 — 1/8" NPT Fml*	1 Front 3 Forward 45° 18 Back 30° 22 Jets Total	1 Front 4 Forward 45° 18 Back 45° 23 Jets Total	1 Front 3 Forward 45° 6 Radial 12 Back 30° 22 Jets Total	1 Front 4 Forward 45° 6 Radial 12 Back 45° 23 Jets Total
	Min Flow #8	Min Flow #8	Min Flow #8	Min Flow #8
FPT4 — 1/4" NPT Fml*	1 Front 3 Forward 45° 24 Back 30° 28 Jets Total	1 Front 6 Forward 45° 24 Back 45° 31 Jets Total	1 Front 4 Forward 45° 12 Radial 18 Back 30° 35 Jets Total	1 Front 8 Forward 45° 8 Radial 15 Back 45° 32 Jets Total
	Min Flow #10	Min Flow #12	Min Flow #14	Min Flow #14
FPT5 — 3/8" NPT Fml*	1 Front 4 Forward 45° 24 Back 30° 29 Jets Total	1 Front 8 Forward 45° 24 Back 45° 33 Jets Total	1 Front 4 Forward 45° 12 Radial 18 Back 30° 35 Jets Total	1 Front 8 Forward 45° 12 Radial 18 Back 45° 39 Jets Total
	Min Flow #12	Min Flow #14	Min Flow #14	Min Flow #15
FPT6 — 1/2" NPT Fml*	1 Front 4 Forward 45° 24 Back 30° 29 Jets Total	1 Front 8 Forward 45° 24 Back 45° 33 Jets Total	1 Front 4 Forward 45° 12 Radial 18 Back 30° 35 Jets Total	1 Front 8 Forward 45° 12 Radial 18 Back 45° 39 Jets Total
	Min Flow #10	Min Flow #14	Min Flow #14	Min Flow #15

* See details on all connection types beginning on page I-2.

NOZZLES

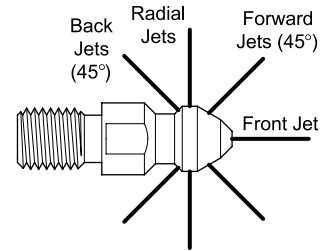
UP TO 15,000 PSI (1000 BAR)







TUBE CLEANING NOZZLES

SERIES MS

- For use with Jetstream flex or rigid lances that have female machine screw threads (UNF, UNC)
- Designed with the smallest possible outside diameter for cleaning small tubes
- Wrench flats for easy installation and removal
- Machined from heat-treated stainless steel
- Maximum working pressure: 10,000 psi (700 bar)
- Four sizes, seven standard patterns and fourteen flow ratings
- See page E-21 for flow ratings and ordering instructions
- Custom patterns available



<div> <div>PATTERNS</div> <div>SIZES Shown Actual Size</div> </div>	1	2	3	4	5	6	7
	For FLEX or RIGID Lance	For FLEX or RIGID Lance	For FLEX or RIGID Lance	For FLEX or RIGID Lance	For RIGID Lance ONLY	For RIGID Lance ONLY	For RIGID Lance ONLY
MS1 — #12-28UNF Male  Diameter .250" (6.4 mm) Length .95" (24.4 mm)	1 Front 6 Back 45° 7 Jets Total Min Flow #2	1 Front 12 Back 45° 13 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Back 45° 10 Jets Total Min Flow #4	1 Front 3 Forward 45° 8 Back 45° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Radial 6 Back 45° 16 Jets Total Min Flow #6	1 Front 6 Radial 7 Jets Total Min Flow #2	1 Front 12 Radial 13 Jets Total Min Flow #5
MS2 — 1/4"-28UNF Male  Diameter .312" (7.9 mm) Length 1.06" (26.9 mm)	1 Front 6 Back 45° 7 Jets Total Min Flow #2	1 Front 12 Back 45° 13 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Back 45° 10 Jets Total Min Flow #4	1 Front 3 Forward 45° 8 Back 45° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Radial 6 Back 45° 16 Jets Total Min Flow #6	1 Front 6 Radial 7 Jets Total Min Flow #2	1 Front 12 Radial 13 Jets Total Min Flow #5
MS3 — 5/16"-24UNF Male  Diameter .375" (9.5 mm) Length 1.12" (28.4 mm)	1 Front 6 Back 45° 7 Jets Total Min Flow #2	1 Front 12 Back 45° 13 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Back 45° 10 Jets Total Min Flow #4	1 Front 3 Forward 45° 8 Back 45° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Radial 6 Back 45° 16 Jets Total Min Flow #6	1 Front 6 Radial 7 Jets Total Min Flow #2	1 Front 12 Radial 13 Jets Total Min Flow #5
MS4 — 5/16"-18UNC Male  Diameter .375" (9.5 mm) Length 1.12" (28.4 mm)	1 Front 6 Back 45° 7 Jets Total Min Flow #2	1 Front 12 Back 45° 13 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Back 45° 10 Jets Total Min Flow #4	1 Front 3 Forward 45° 8 Back 45° 12 Jets Total Min Flow #5	1 Front 3 Forward 45° 6 Radial 6 Back 45° 16 Jets Total Min Flow #6	1 Front 6 Radial 7 Jets Total Min Flow #2	1 Front 12 Radial 13 Jets Total Min Flow #5

NOZZLES

Related Items

RIGID LANCES, MACHINE SCREW THREADS — See page D-11

FLEX LANCES, STAINLESS STEEL BRAIDED — See page D-7

NOZZLES

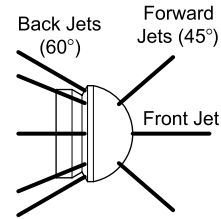
UP TO 15,000 PSI (1000 BAR)



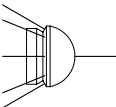
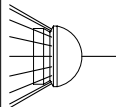
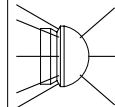
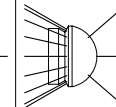


TUBE CLEANING NOZZLES

SERIES C

- For use with specially designed Jetstream flex lances that have male machine screw threads (UNEF)
- Ultra-compact design for cleaning U-tubes and other small diameter tubes
- Wrench flats for easy installation and removal
- Machined from heat-treated stainless steel
- Locking pin (shown below) must be installed to prevent nozzle from unscrewing from lance
- Maximum working pressure: **C1:** 8,000 psi (550 bar)
C2: 10,000 psi (700 bar)
- Two sizes, four standard patterns and fourteen flow ratings
- See page E-21 for flow ratings and ordering instructions
- Custom patterns available



NOZZLES

PATTERNS		1	2	3	4
SIZES Shown Actual Size					
 C1 — 5/16"-32UNEF Female Diameter .500" (12.7 mm) Length .40" (10.2 mm)		1 Front 8 Back 60° 9 Jets Total	1 Front 16 Back 60° 17 Jets Total	1 Front 3 Forward 45° 8 Back 60° 12 Jets Total	1 Front 3 Forward 45° 16 Back 60° 20 Jets Total
		Min Flow #4	Min Flow #6	Min Flow #5	Min Flow #7
 C2 — 5/16"-32UNEF Female Diameter .560" (14.2 mm) Length .47" (11.9 mm)		1 Front 8 Back 60° 9 Jets Total	1 Front 16 Back 60° 17 Jets Total	1 Front 3 Forward 45° 8 Back 60° 12 Jets Total	1 Front 3 Forward 45° 16 Back 60° 20 Jets Total
		Min Flow #4	Min Flow #6	Min Flow #5	Min Flow #7

Accessories

NOZZLE LOCKING PIN

Fits both C1 and C2 size nozzles.
Installed through hole in side of nozzle.

Part No. 25501 (Sold Individually)



PIN REMOVAL TOOL

For removal of pin above.

Part No. 25749



Related Items

FLEX LANCES, STAINLESS STEEL BRAIDED — See page D-7

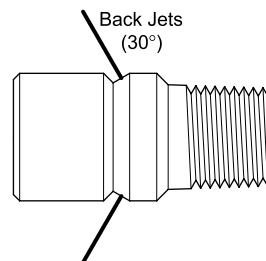
NOZZLES

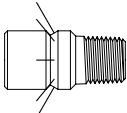
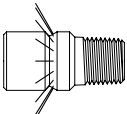




UP TO 15,000 PSI (1000 BAR)



TUBE CLEANING NOZZLES SERIES TP THRUSTERS

- Used in combination with Tube Spinners or other nozzles that do not have rear jets to provide thrust for pulling through tubes
- Rear orifices recessed for protection from surface abrasion or damage by wrenches
- Female pipe threads at inlet (NPT Fml) and male pipe threads at outlet (NPT Male)
- Machined from heat-treated stainless steel
- Maximum working pressure: 15,000 psi (1000 bar)
- Four sizes, two standard patterns and thirteen flow ratings
- See page E-21 for flow ratings and ordering instructions
- Custom patterns available



<div> SIZES Shown Actual Size </div>		PATTERNS		1	2
					
TP4 — 1/4" NPT Fml x 1/4" NPT Male  <div> Diameter .665" (16.9 mm) Length 1.63" (41.4 mm) </div>		Inlet 1/4" NPT Fml Outlet 1/4" NPT Male		8 Back 30°	16 Back 30°
				Min Flow #3	Min Flow #6
TP5 — 3/8" NPT Fml x 3/8" NPT Male  <div> Diameter .875" (22.2 mm) Length 1.65" (41.9 mm) </div>		Inlet 3/8" NPT Fml Outlet 3/8" NPT Male		8 Back 30°	16 Back 30°
				Min Flow #3	Min Flow #6
TP6 — 1/2" NPT Fml x 1/2" NPT Male  <div> Diameter 1.040" (26.4 mm) Length 2.03" (51.6 mm) </div>		Inlet 1/2" NPT Fml Outlet 1/2" NPT Male		8 Back 30°	16 Back 30°
				Min Flow #3	Min Flow #6
TP7 — 3/4" NPT Fml x 3/4" NPT Male  <div> Diameter 1.370" (34.8 mm) Length 2.40" (61.0 mm) </div>		Inlet 3/4" NPT Fml Outlet 3/4" NPT Male		8 Back 30°	16 Back 30°
				Min Flow #3	Min Flow #6

* See details on all connection types beginning on page I-2.

NOZZLES

UP TO 15,000 PSI (1000 BAR)



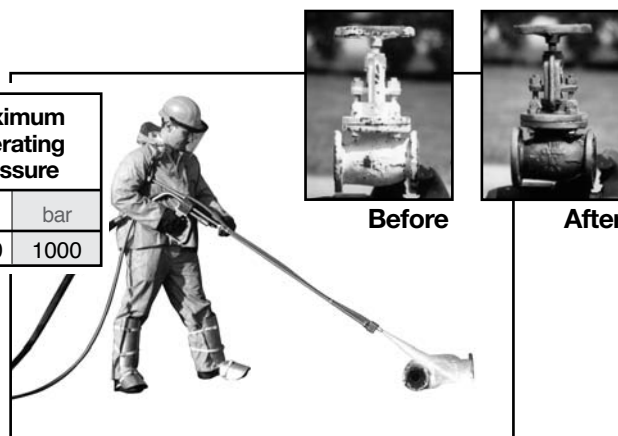
ABRASIVE INJECTOR NOZZLE

- Provides powerful, cohesive mix of water and abrasive
- Easily replaceable, precision-drilled spool nozzle creates a powerful, focused waterjet and provides suction force to pull the abrasive media into the nozzle and mix with pressurized water. No air feed required!
- Wear-resistant, lightweight boron carbide abrasive nozzle
- Integral nozzle shut-off valve prevents clogging of abrasive
- Heat-treated stainless steel construction
- Lightweight, compact design
- Includes #5 Spool Nozzle



Part No.	Inlet Water Connection*	Inlet Abrasive Connection*	Assembly Weight		Maximum Operating Pressure	
			lb	kg	psi	bar
52810	3/8" NPT Fml	1/2" Hose Barb	1.5	0.7	15,000	1000

* See details on all connection types beginning on page I-2.



SPOOL NOZZLES

- Control flow of water through the nozzle
- Two standard flow ratings are available
- Custom drilled spool nozzles available



Part No.	Flow Rate	Flow (gpm) at specified pressures (psi)													Flow (lpm) at specified pressures (bar)									
		3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	200	300	400	500	600	700	800	900	1000	
53106	2	1.4	1.6	1.8	1.9	2.1	2.2	2.4	2.5	2.6	2.7	2.9	3.0	3.1	5.1	6.3	7.2	8.1	8.8	9.6	10.2	10.8	11.4	
53107	5	3.6	4.2	4.6	5.1	5.5	5.9	6.2	6.6	6.9	7.2	7.5	7.8	8.0	13.4	16.4	18.9	21.2	23.2	25.0	26.8	28.4	29.9	

Related Items

DURASAFE™ HAND GUNS —

See pages C-1 – C-6

ABRASIVES



Sharpjet
Garnet
55 lb (25 kg) bag

Part No.	Grit
70034-36	36
70034-50	50
70034-60	60
70034-80	80
70034-120	120



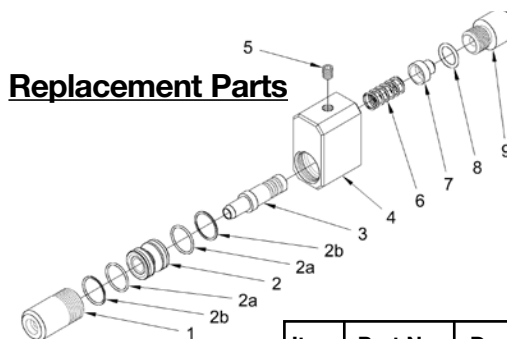
MaxxStrip
Magnesium Sulphate/
Kieserite
50 lb (23 kg) bag

Part No.	Mesh Size
J70378-C	20-40
J70378-M	40-60
J70378-F	60-80



Sofstrip
Sodium Bicarbonate
50 lb (23 kg) bag

Part No.	Mesh Size
J70377-XL	60-80
J70377-M	80-100



Replacement Parts



Abrasive Pot
Part No. 27301

Item	Part No.	Description
1	52815	Abrasive Nozzle
2	53106	#2 Spool Nozzle
	53107	#5 Spool Nozzle
2a	26920	O-Ring
2b	27030	Backup Ring
3	52708	Hose Barb
4	52706	Body
5	25395	Plug
6	26534	Spring
7	52711	Valve
8	25228	O-Ring
9	52709	Adapter, 3/8" NPT Fml

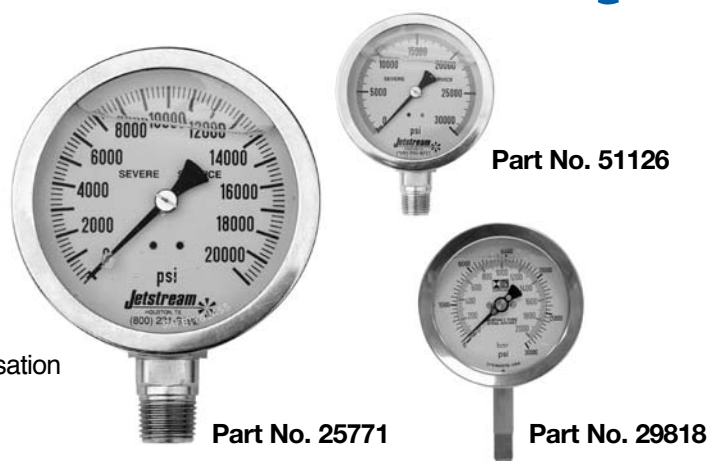
FITTINGS & GAUGES

UP TO 15,000 PSI (1000 BAR)



PRESSURE GAUGES

- Bottom mount
- 4" high visibility face with laminated safety glass dial cover
- Accurate within +/-0.5% of full scale range
- Stainless steel case, fitting and internals
- Heavy-duty movement
- Glycerin-filled for protection against vibration and pulsation
- Restrictor screw provides maximum protection against pulsation
- Blow-out pressure relief plug for maximum safety
- Pointer zero adjustment



Part No.	Dial Size		Mounting Style	Connection Type*	Units	Scale	Graduations	Maximum Operating Pressure	
	in	mm						psi	bar
25771	4	100	Bottom	1/2" NPT Male	psi	0 — 20,000 psi	200 psi	10,000	700
51126	4	100	Bottom	1/2" NPT Male	psi	0 — 30,000 psi	200 psi	15,000	1000
55416**	4	100	Bottom	1/2" NPT Male	psi/bar	0 — 30,000 psi 0 — 2000 bar	500 psi 20 bar	15,000	1000
29818	4	100	Bottom	9/16" HP Male	psi/bar	0 — 30,000 psi 0 — 2000 bar	500 psi 20 bar	15,000	1000

* See details on all connection types beginning on page I-2.

** Includes adapter, gland nut and collar to adapt from 9/16" HP tube nipple.

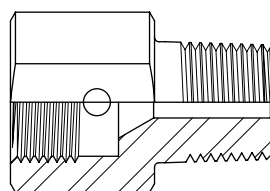
Accessories



GAUGE EXTENSION

- Raises height of gauge for unobstructed reading
- 1/2" NPT Male x 1/2" NPT Fml
- 4-1/2" (114 mm) lg.
- Stainless steel
- Copper-plated for galling resistance

Part No. 55176



GAUGE ADAPTER

- Connects gauge (part no. 29818) to 1/2" NPT Fml port
- 1/2" NPT Male x 9/16" MP female
- Small I.D. for proper seating of 9/16" HP tube nipple
- 9/16" MP gland nut and collar sold separately
- Stainless steel
- Copper-plated for galling resistance

Part No. 55402

FITTINGS & GAUGES

UP TO 15,000 PSI (1000 BAR)



THREAD LUBRICANTS

Thread Lubricants prevent threaded connections from galling together or seizing up, and are a necessary protection for stainless steel threaded components.



SILVER-BASED ANTI-SEIZE

.7 oz. Stick

Bottom twists to extend a solid, rub-on thread lubricant for easy, mess free application.

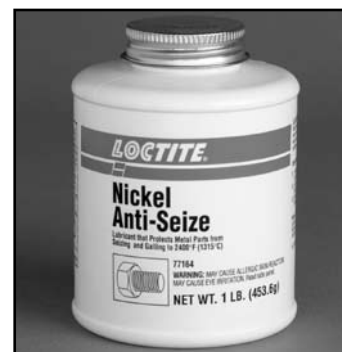
Part No. 29057



BLUE GOOP THREAD LUBRICANT

2 oz. Tube

Part No. 27721



NICKEL-BASED ANTI-SEIZE

1 lb. Brush Top Can

Part No. 28197

TEFLON TAPE



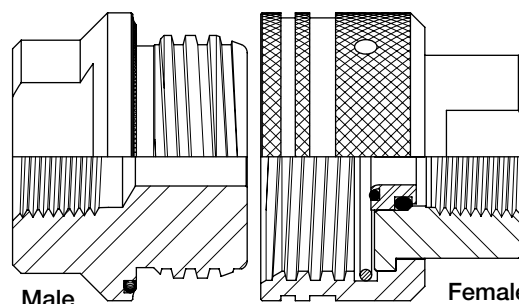
1/2" x 520" roll

For use on pipe thread (NPT) connections.

Part No. 40282

TWIS-LOK QUICK CONNECT COUPLINGS

- Rugged Acme threads allow easy, hand-tight connection of hoses and other components
- Garter spring-locking mechanism prevents loosening during operation
- Easily replaceable seal assembly is hydraulically-biased for sure sealing
- 3/8" and 1/2" coupling halves are interchangeable and use the same seal assembly
- Stainless steel



Part No.	Connection Type*	Coupling Halves		Seal Assembly	Maximum Operating Pressure	
		Male	Female**		psi	bar
52663	1" NPT Fml	52662	52677	52657	15,000	1000
51405	3/4" NPT Fml	51334	51665	51624	15,000	1000
51402	1/2" NPT Fml	51408	51670	51628	15,000	1000
51552	3/8" NPT Fml	51550	51554	51628	15,000	1000

* See details on all connection types beginning on page I-2.

** Female coupling halves include seal assembly.

FITTINGS & GAUGES

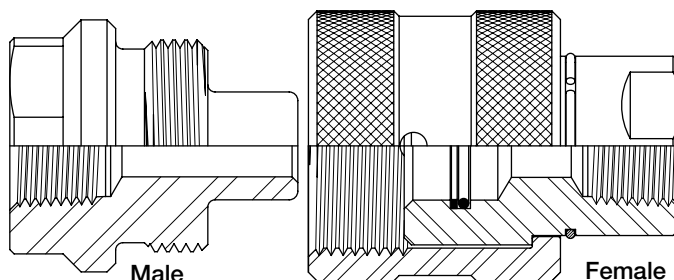
UP TO 15,000 PSI (1000 BAR)



SCREW TYPE QUICK CONNECT COUPLINGS

PARTEK STYLE

- Easy, hand-tight connection of hoses and other components
- 3/8" and 1/2" NPT coupling halves are interchangeable
- 1" Type M, 3/4" Type M and 9/16" MP coupling halves are interchangeable
- Seal kits include O-ring seal and backup ring
- Stainless steel



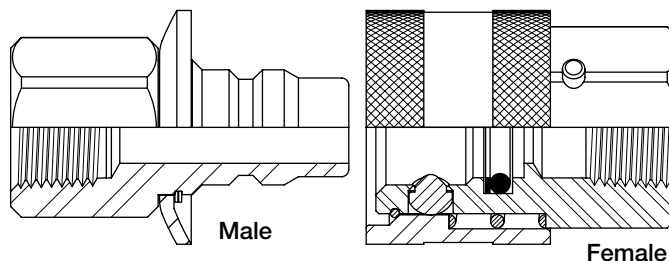
Part No.	Connection Type*	Coupling Halves		Seal Kit	Retaining Ring	Maximum Operating Pressure	
		Male	Female**			psi	bar
28921	1" NPT Fml	28921M	28921F	28921S	J70380	10,000	700
28844	3/4" NPT Fml	28844M	28844F	28844S	J70381	15,000	1000
50989	1/2" NPT Fml	50990	52684	50989S	25690	15,000	1000
54180	3/8" NPT Fml	54178	54180F	50989S	25690	15,000	1000
54754	1" Type M Male	54763	54762	54789	25690	20,000	1400
54767	3/4" Type M Male	54764	54758	54789	25690	20,000	1400
54768	9/16" MP Female	54766	54761	54789	25690	20,000	1400

* See details on all connection types beginning on page I-2.

** Female coupling halves include seals.

LUG STYLE QUICK CONNECT COUPLINGS

- Spring-loaded sleeve retracts for easy connection of hoses and other components
- Safety pin prevents accidental disconnect
- 3/8" and 1/2" coupling halves are interchangeable and use the same seal assembly
- Plated steel



Part No.	Connection Type*	Coupling Halves		Maximum Operating Pressure	
		Male	Female**	psi	bar
50557	1/2" NPT Fml	26175	26176	10,000	700
50906	3/8" NPT Fml	26181	26182	10,000	700

* See details on all connection types beginning on page I-2.

** Female coupling halves include seal assembly.

Replacement Parts

Part No. 25212 O-Ring

Part No. 26657 Backup Ring

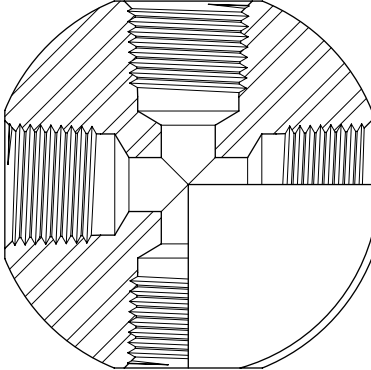
FITTINGS & GAUGES

UP TO 15,000 PSI (1000 BAR)



CROSSES — PIPE THREAD (NPT)

- Stainless steel

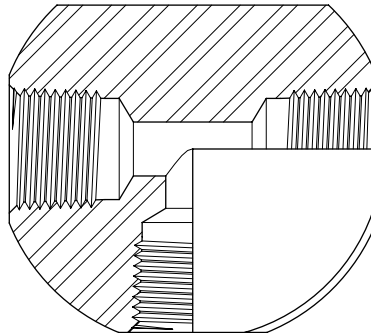


Part No.	Connection Type*	Maximum Operating Pressure	
		psi	bar
96048	1" NPT Fml	10,000	700
54368	3/4" NPT Fml	15,000	1000
90262	1/2" NPT Fml	15,000	1000
29532	3/8" NPT Fml	15,000	1000
28577	1/4" NPT Fml	15,000	1000

* See details on all connection types beginning on page I-2.

TEES — PIPE THREAD (NPT)

- Stainless steel

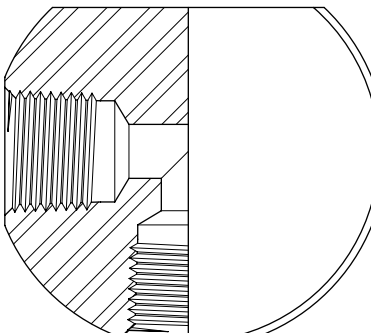


Part No.	Connection Type*	Maximum Operating Pressure	
		psi	bar
52673	1" NPT Fml	15,000	1000
50385	3/4" NPT Fml	15,000	1000
51001	1/2" NPT Fml	15,000	1000
50354	3/8" NPT Fml	15,000	1000
26166	1/4" NPT Fml	15,000	1000
26171	1/8" NPT Fml	15,000	1000

* See details on all connection types beginning on page I-2.

90° ELBOWS — PIPE THREAD (NPT)

- Stainless steel



Part No.	Connection Type*	Maximum Operating Pressure	
		psi	bar
52672	1" NPT Fml	15,000	1000
50336	3/4" NPT Fml	15,000	1000
50300	1/2" NPT Fml	15,000	1000
50298	3/8" NPT Fml	15,000	1000
26162	1/4" NPT Fml	15,000	1000
26173	1/8" NPT Fml	15,000	1000

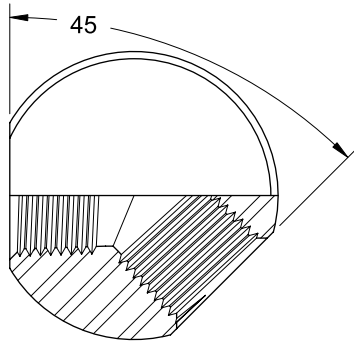
* See details on all connection types beginning on page I-2.

FITTINGS & GAUGES

UP TO 15,000 PSI (1000 BAR)

45° ELBOWS — PIPE THREAD (NPT)

- Stainless steel

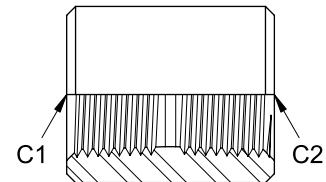


Part No.	Connection Type*	Maximum Operating Pressure	
		psi	bar
56594	1" NPT Fml	15,000	1000
50302	3/4" NPT Fml	15,000	1000
50824	1/2" NPT Fml	15,000	1000
50296	3/8" NPT Fml	15,000	1000

* See details on all connection types beginning on page I-2.

COUPLINGS — PIPE THREAD (NPT)

- Machined from heat-treated stainless steel to allow small outside diameters for tube cleaning.



Part No.	Connection Types*		O.D. (D)		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	in	mm	psi	bar
52676	1" NPT Fml	1" NPT Fml	2.00	50.8	15,000	1000
28894	1" NPT Fml	3/4" NPT Fml	2.00	50.8	15,000	1000
J55701	1" NPT Fml	1/2" NPT Fml	2.00	50.8	15,000	1000
26055	3/4" NPT Fml	3/4" NPT Fml	1.50	38.1	15,000	1000
26067	3/4" NPT Fml	1/2" NPT Fml	1.50	38.1	15,000	1000
26059	3/4" NPT Fml	3/8" NPT Fml	1.50	38.1	15,000	1000
26056	1/2" NPT Fml	1/2" NPT Fml	1.19	30.2	15,000	1000
26072	1/2" NPT Fml	3/8" NPT Fml	1.19	30.2	15,000	1000
50342	1/2" NPT Fml	1/4" NPT Fml	1.25	31.8	15,000	1000
50059	1/2" NPT Fml	1/8" NPT Fml	1.19	30.2	15,000	1000
26057	3/8" NPT Fml	3/8" NPT Fml	.88	22.2	15,000	1000
26061	3/8" NPT Fml	1/4" NPT Fml	1.13	28.6	15,000	1000
26064	3/8" NPT Fml	1/8" NPT Fml	.94	23.8	15,000	1000
50816	1/4" NPT Fml	1/4" NPT Fml	.75	19.1	15,000	1000
50852	1/4" NPT Fml	1/8" NPT Fml	.75	19.1	15,000	1000
J55702	1/4" NPT Fml	1/16" NPT Fml	.75	19.1	15,000	1000
51191	1/8" NPT Fml	1/8" NPT Fml	.50	12.7	15,000	1000
50933	1/8" NPT Fml	1/16" NPT Fml	.50	12.7	15,000	1000
50638	1/16" NPT Fml	1/16" NPT Fml	.40	10.2	15,000	1000

* See details on all connection types beginning on page I-2.

FITTINGS & GAUGES

UP TO 15,000 PSI (1000 BAR)

HAMMER UNIONS — PIPE THREAD (NPT)

- Stainless steel

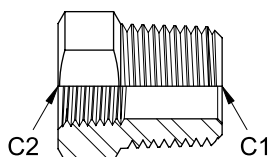


Part No.	Connection Type*	Seal	Maximum Operating Pressure	
			psi	bar
28319	1-1/4" NPT Fml	29319S	10,000	700
27181	1" NPT Fml	92011	10,000	700
50392	3/4" NPT Fml	26314	10,000	700
29485	1/2" NPT Fml	29485S	10,000	700
29486	3/8" NPT Fml	29486S	10,000	700

* See details on all connection types beginning on page I-2.

REDUCING BUSHINGS — PIPE THREAD (NPT)

- Stainless steel
- Copper-plated for galling resistance



Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
29054	2" NPT Male	1-1/2" NPT Fml	7,500	500
J70392	2" NPT Male	1" NPT Fml	7,500	500
28611	1-1/2" NPT Male	1" NPT Fml	7,500	500
29828	1-1/4" NPT Male	1" NPT Fml	7,500	500
26157	1" NPT Male	3/4" NPT Fml	15,000	1000
26124	1" NPT Male	1/2" NPT Fml	15,000	1000
54721	1" NPT Male	1/4" NPT Fml	15,000	1000
26065	3/4" NPT Male	1/2" NPT Fml	15,000	1000
26063	3/4" NPT Male	3/8" NPT Fml	15,000	1000
26069	3/4" NPT Male	1/4" NPT Fml	15,000	1000
26074	3/4" NPT Male	1/8" NPT Fml	15,000	1000
26062	1/2" NPT Male	3/8" NPT Fml	15,000	1000
25904	1/2" NPT Male	1/4" NPT Fml	15,000	1000
25902	1/2" NPT Male	1/8" NPT Fml	15,000	1000
53623	1/2" NPT Male	1/16" NPT Fml	15,000	1000
25903	3/8" NPT Male	1/4" NPT Fml	15,000	1000
25901	3/8" NPT Male	1/8" NPT Fml	15,000	1000
28822	3/8" NPT Male	1/16" NPT Fml	15,000	1000
26073	1/4" NPT Male	1/8" NPT Fml	15,000	1000
J55719	1/4" NPT Male	1/16" NPT Fml	15,000	1000
26158	1/8" NPT Male	1/16" NPT Fml	15,000	1000

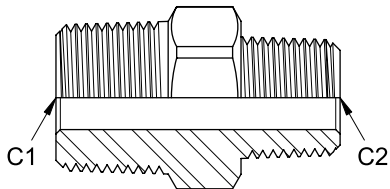
* See details on all connection types beginning on page I-2.

FITTINGS & GAUGES

UP TO 15,000 PSI (1000 BAR)

HEX NIPPLES — PIPE THREAD (NPT)

- Stainless steel nipples are copper plated for galling resistance



Part No.	Connection Types*		Material	Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)		psi	bar
J70382	2" NPT Male	2" NPT Male	Stainless Steel	7,500	500
J70383	2" NPT Male	1-1/2" NPT Male	Stainless Steel	7,500	500
29055	1-1/2" NPT Male	1-1/2" NPT Male	Stainless Steel	7,500	500
J70384	1-1/2" NPT Male	1-1/4" NPT Male	Stainless Steel	7,500	500
J70385	1-1/4" NPT Male	1-1/4" NPT Male	Stainless Steel	7,500	500
J70386	1-1/4" NPT Male	1" NPT Male	Stainless Steel	7,500	500
52674	1" NPT Male	1" NPT Male	Stainless Steel	15,000	1000
53054	1" NPT Male	3/4" NPT Male	Stainless Steel	15,000	1000
J70387	1" NPT Male	1/2" NPT Male	Stainless Steel	15,000	1000
26151	3/4" NPT Male	3/4" NPT Male	Stainless Steel	15,000	1000
51699	3/4" NPT Male	3/4" NPT Male	Plated Steel	15,000	1000
51702	3/4" NPT Male	1/2" NPT Male	Plated Steel	15,000	1000
J70388	3/4" NPT Male	3/8" NPT Male	Stainless Steel	15,000	1000
J70389	3/4" NPT Male	1/4" NPT Male	Stainless Steel	15,000	1000
50496	1/2" NPT Male	1/2" NPT Male	Plated Steel	15,000	1000
50488	1/2" NPT Male	1/2" NPT Male	Stainless Steel	15,000	1000
26153	1/2" NPT Male	3/8" NPT Male	Stainless Steel	15,000	1000
26084	1/2" NPT Male	1/4" NPT Male	Stainless Steel	15,000	1000
26154	1/2" NPT Male	1/8" NPT Male	Stainless Steel	15,000	1000
26152	3/8" NPT Male	3/8" NPT Male	Stainless Steel	15,000	1000
26155	3/8" NPT Male	1/4" NPT Male	Stainless Steel	15,000	1000
25454	3/8" NPT Male	1/8" NPT Male	Stainless Steel	15,000	1000
25455	1/4" NPT Male	1/4" NPT Male	Stainless Steel	15,000	1000
26075	1/4" NPT Male	1/8" NPT Male	Stainless Steel	15,000	1000
J70390	1/4" NPT Male	1/16" NPT Male	Stainless Steel	15,000	1000
25452	1/8" NPT Male	1/8" NPT Male	Stainless Steel	15,000	1000
26156	1/8" NPT Male	1/16" NPT Male	Stainless Steel	15,000	1000
J70391	1/16" NPT Male	1/16" NPT Male	Stainless Steel	15,000	1000

* See details on all connection types beginning on page I-2.

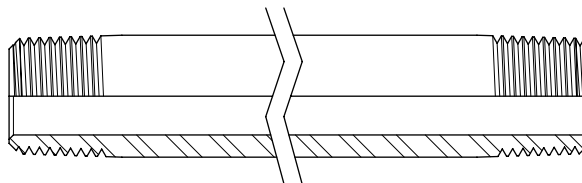
FITTINGS & GAUGES





UP TO 15,000 PSI (1000 BAR)



NIPPLES — PIPE THREAD (NPT)

- Stainless steel



Part No. specify length (in inches) in place of "XX"	Connection Type* 	O.D. 		I.D. 		Max. Working Pressure 	
		in	mm	in	mm	psi	bar
J55703-XX	1" NPT Male	1.315	33.4	.599	15.2	10,000	700
26146-XX	3/4" NPT Male	1.050	26.7	.434	11.0	15,000	1000
28875-XX	3/4" NPT Male	1.050	26.7	.614	15.6	10,000	700
55450-XX	1/2" NPT Male	.840	21.3	.534	13.6	15,000	1000
51098-XX	3/8" NPT Male	.675	17.1	.415	10.5	15,000	1000
51106-XX	1/4" NPT Male	.540	13.7	.302	7.7	15,000	1000
25215-XX	1/8" NPT Male	.405	10.3	.215	5.5	15,000	1000
51397-XX	1/16" NPT Male	.312	7.9	.182	4.6	15,000	1000

* See details on all connection types beginning on page I-2.

Related Items

RIGID LANCES: PIPE THREADS — See page D-10

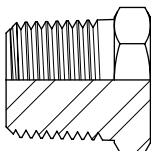
MEDIUM PRESSURE NIPPLES — See page F-18

FITTINGS & GAUGES

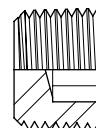
PLUGS — PIPE THREAD (NPT)



HEX HEAD

- Stainless steel plugs are copper plated for galling resistance





SOCKET HEAD



Part No.	Connection Type* 	Material	Maximum Operating Pressure 	
			psi	bar
28602	1" NPT Male	Stainless Steel	15,000	1000
26147	3/4" NPT Male	Stainless Steel	15,000	1000
25174	1/2" NPT Male	Plated Steel	15,000	1000
26148	3/8" NPT Male	Plated Steel	15,000	1000
26149	1/4" NPT Male	Plated Steel	15,000	1000
25120	1/8" NPT Male	Plated Steel	15,000	1000

* See details on all connection types beginning on page I-2.

Part No.	Connection Type* 	Material	Maximum Operating Pressure 	
			psi	bar
26164	3/4" NPT Male	Plated Steel	15,000	1000
26115	1/2" NPT Male	Plated Steel	15,000	1000
26077	3/8" NPT Male	Plated Steel	15,000	1000
25392	1/4" NPT Male	Plated Steel	15,000	1000
26170	1/8" NPT Male	Plated Steel	15,000	1000
25395	1/16" NPT Male	Plated Steel	15,000	1000

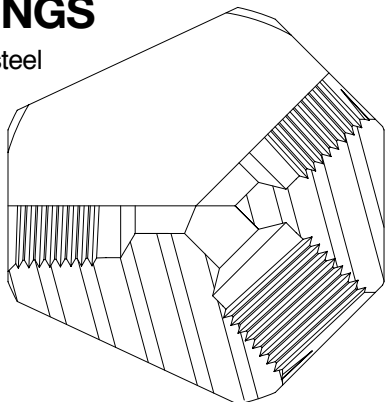
* See details on all connection types beginning on page I-2.



FITTINGS & GAUGES

UP TO 15,000 PSI (1000 BAR)

Y-FITTINGS

- Stainless steel

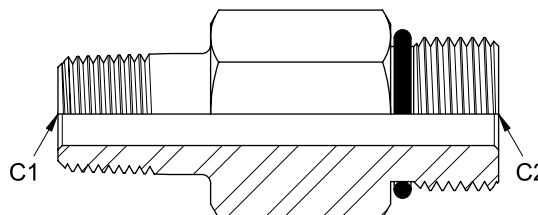


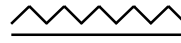

Part No.	Connection Type* 	Maximum Operating Pressure 	
		psi	bar
29678	1" NPT Fml	10,000	700
70040	3/4" NPT Fml	15,000	1000
J70393	1/2" NPT Fml	15,000	1000

* See details on all connection types beginning on page I-2.

PIPE THREAD MALE TO STRAIGHT BOSS MALE ADAPTERS

- Stainless steel
- Copper plated for galling resistance

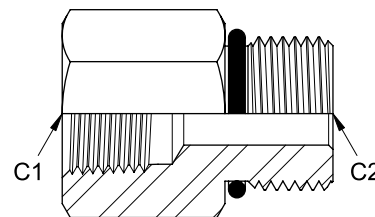




Part No.	Connection Types* 		Replacement Seal	Maximum Operating Pressure 	
	Connection 1 (C1)	Connection 2 (C2)		psi	bar
50675	1/2" NPT Male	#12 Straight Boss Male	25670	10,000	700

* See details on all connection types beginning on page I-2.

PIPE THREAD FEMALE TO STRAIGHT BOSS MALE ADAPTERS

- Stainless steel



Part No.	Connection Types* 		Replacement Seal	Maximum Operating Pressure 	
	Connection 1 (C1)	Connection 2 (C2)		psi	bar
54909	1/2" NPT Fml	#12 Straight Boss Male	25670	10,000	700
50674	1/2" NPT Fml	#8 Straight Boss Male	25824	10,000	700

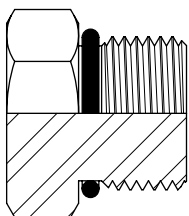
* See details on all connection types beginning on page I-2.

FITTINGS & GAUGES

UP TO 15,000 PSI (1000 BAR)

STRAIGHT BOSS PLUGS

- Stainless steel

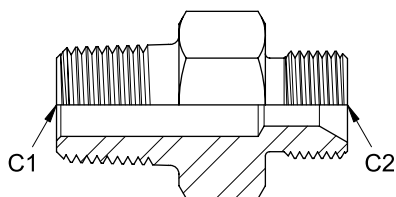


Part No.	Connection Type*	Replacement Seal	Maximum Operating Pressure	
			psi	bar
25702	#12 Straight Boss Male	25670	10,000	700
25703	#8 Straight Boss Male	25824	10,000	700

* See details on all connection types beginning on page I-2.

PIPE THREAD MALE (NPT MALE) TO TYPE M MALE ADAPTERS

- Stainless steel
- Copper plated for galling resistance

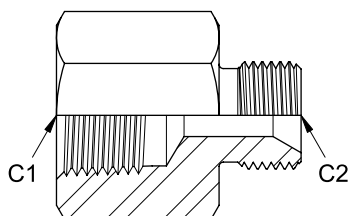


Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
54719	1" NPT Male	1-5/16" Type M Male	15,000	1000
J55704	1" NPT Male	1" Type M Male	15,000	1000
28852	3/4" NPT Male	1-5/16" Type M Male	15,000	1000
29178	3/4" NPT Male	1" Type M Male	15,000	1000
J55706	3/4" NPT Male	3/4" Type M Male	15,000	1000
J55707	3/4" NPT Male	9/16" Type M Male	15,000	1000
29342	1/2" NPT Male	1" Type M Male	15,000	1000
29185	1/2" NPT Male	3/4" Type M Male	15,000	1000
28702	1/2" NPT Male	9/16" Type M Male	15,000	1000
01437	3/8" NPT Male	9/16" Type M Male	15,000	1000

* See details on all connection types beginning on page I-2.

PIPE THREAD FEMALE (NPT FML) TO TYPE M MALE ADAPTERS

- Stainless steel



Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
70167	1/2" NPT Fml	1" Type M Male	15,000	1000
29327	1/2" NPT Fml	3/4" Type M Male	15,000	1000
70168	3/8" NPT Fml	3/4" Type M Male	15,000	1000

* See details on all connection types beginning on page I-2.

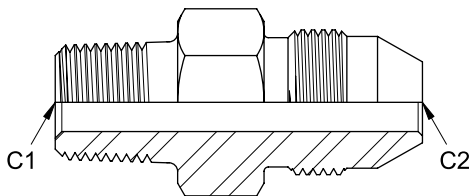
FITTINGS & GAUGES

UP TO 15,000 PSI (1000 BAR)



PIPE THREAD MALE (NPT MALE) TO MEDIUM PRESSURE MALE ADAPTERS

- Stainless steel
- Copper plated for galling resistance

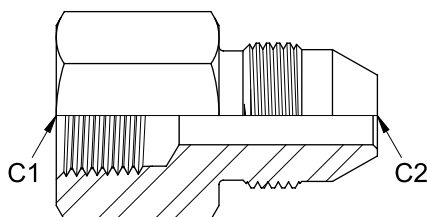


Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
55033	1" NPT Male	1" MP Male	15,000	1000
29669	1" NPT Male	3/4" MP Male	15,000	1000
29316	1" NPT Male	9/16" MP Male	15,000	1000
J55708	3/4" NPT Male	1" MP Male	15,000	1000
29253	3/4" NPT Male	3/4" MP Male	15,000	1000
29180	3/4" NPT Male	9/16" MP Male	15,000	1000
28335	1/2" NPT Male	1" MP Male	15,000	1000
28261	1/2" NPT Male	3/4" MP Male	15,000	1000
27971	1/2" NPT Male	9/16" MP Male	15,000	1000
29000	1/2" NPT Male	3/8" MP Male	15,000	1000
J55709	3/8" NPT Male	9/16" MP Male	15,000	1000
J55711	3/8" NPT Male	3/8" MP Male	15,000	1000
29183	1/4" NPT Male	9/16" MP Male	15,000	1000
28610	1/4" NPT Male	3/8" MP Male	15,000	1000

* See details on all connection types beginning on page I-2.

PIPE THREAD FEMALE (NPT FML) TO MEDIUM PRESSURE MALE ADAPTERS

- Stainless steel



Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
29534	3/4" NPT Fml	3/4" MP Male	15,000	1000
29673	1/2" NPT Fml	1" MP Male	15,000	1000
28903	1/2" NPT Fml	3/4" MP Male	15,000	1000
28334	1/2" NPT Fml	9/16" MP Male	15,000	1000
28003	1/2" NPT Fml	3/8" MP Male	15,000	1000
28386	3/8" NPT Fml	9/16" MP Male	15,000	1000
54958	3/8" NPT Fml	3/8" MP Male	15,000	1000
29184	1/8" NPT Fml	9/16" MP Male	15,000	1000
29182	1/4" NPT Fml	9/16" MP Male	15,000	1000

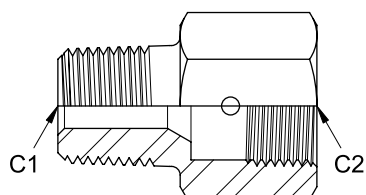
* See details on all connection types beginning on page I-2.

FITTINGS & GAUGES

UP TO 15,000 PSI (1000 BAR)

PIPE THREAD MALE (NPT MALE) TO MEDIUM PRESSURE FEMALE ADAPTERS

- Stainless steel
- Copper plated for galling resistance

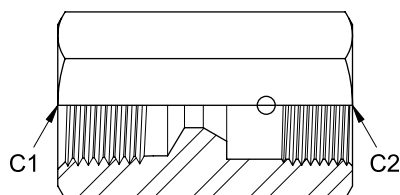


Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
29392	3/4" NPT Male	1" MP Female	15,000	1000
00111	3/4" NPT Male	3/4" MP Female	15,000	1000
28092	1/2" NPT Male	9/16" MP Female	15,000	1000
J55712	1/2" NPT Male	3/8" MP Female	15,000	1000
J55713	3/8" NPT Male	9/16" MP Female	15,000	1000
J55714	3/8" NPT Male	3/8" MP Female	15,000	1000
J55716	1/4" NPT Male	9/16" MP Female	15,000	1000
J55717	1/4" NPT Male	3/8" MP Female	15,000	1000

* See details on all connection types beginning on page I-2.

PIPE THREAD FEMALE (NPT FML) TO MEDIUM PRESSURE FEMALE ADAPTERS

- Stainless steel

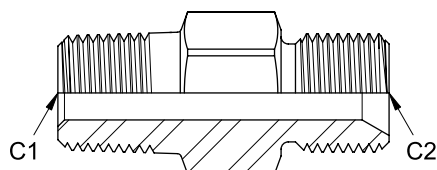


Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
29186	3/4" NPT Fml	9/16" MP Female	10,000	700
29279	1/2" NPT Fml	3/4" MP Female	15,000	1000
29010	1/2" NPT Fml	9/16" MP Female	15,000	1000
28523	1/4" NPT Fml	9/16" MP Female	15,000	1000

* See details on all connection types beginning on page I-2.

PIPE THREAD MALE (NPT MALE) TO BRITISH STANDARD PIPE (BSP) MALE ADAPTERS

- Stainless steel
- Copper plated for galling resistance



Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
J55789	1" NPT Male	G3/4" BSP Male	15,000	1000
55099	3/4" NPT Male	G3/4" BSP Male	15,000	1000
55098	1/2" NPT Male	G1/2" BSP Male	15,000	1000
55097	1/2" NPT Male	G3/8" BSP Male	15,000	1000
55096	1/2" NPT Male	G1/4" BSP Male	15,000	1000

* See details on all connection types beginning on page I-2.

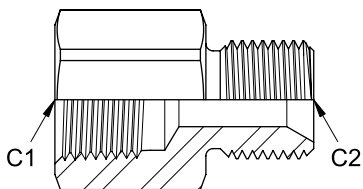
FITTINGS & GAUGES

UP TO 15,000 PSI (1000 BAR)



PIPE THREAD FEMALE (NPT FML) TO BRITISH STANDARD PIPE (BSP) MALE ADAPTERS

- Stainless steel

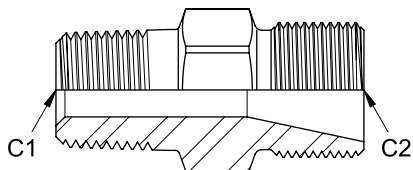


Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
55224	1/2" NPT Fml	G1/2" BSP Male	15,000	1000

* See details on all connection types beginning on page I-2.

PIPE THREAD MALE (NPT MALE) TO METRIC MALE ADAPTERS

- Stainless steel
- Copper plated for galling resistance

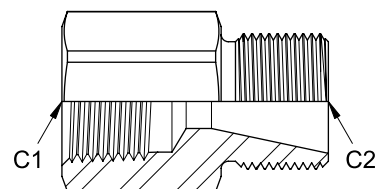


Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
55094	3/4" NPT Male	M36 x 2.0 Male	15,000	1000
55093	3/4" NPT Male	M24 x 1.5 Male	15,000	1000
55092	1/2" NPT Male	M24 x 1.5 Male	15,000	1000
55091	1/2" NPT Male	M22 x 1.5 Male	15,000	1000

* See details on all connection types beginning on page I-2.

PIPE THREAD FEMALE (NPT FML) TO METRIC MALE ADAPTERS

- Stainless steel



Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
55223	1/2" NPT Fml	M24 x 1.5 Male	15,000	1000
55222	1/2" NPT Fml	M22 x 1.5 Male	15,000	1000

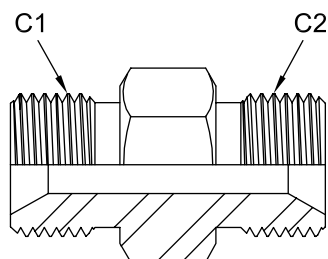
* See details on all connection types beginning on page I-2.

FITTINGS & GAUGES

UP TO 15,000 PSI (1000 BAR)

TYPE M MALE CONNECTORS

- Stainless steel

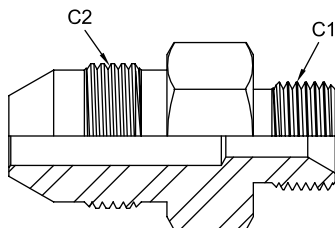


Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
29058	1-5/16" Type M Male	1-5/16" Type M Male	20,000	1400
29059	1-5/16" Type M Male	1" Type M Male	20,000	1400
29060	1-5/16" Type M Male	3/4" Type M Male	20,000	1400
29061	1" Type M Male	1" Type M Male	20,000	1400
28487	1" Type M Male	3/4" Type M Male	20,000	1400
29019	1" Type M Male	9/16" Type M Male	20,000	1400
28196	3/4" Type M Male	3/4" Type M Male	20,000	1400
29062	3/4" Type M Male	9/16" Type M Male	20,000	1400
27527	9/16" Type M Male	9/16" Type M Male	40,000	2750

* See details on all connection types beginning on page I-2.

TYPE M MALE TO MEDIUM PRESSURE MALE CONNECTORS

- Stainless steel



Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
28330	1-5/16" Type M Male	1" MP Male	20,000	1400
28786	1-5/16" Type M Male	3/4" MP Male	20,000	1400
28299	1-5/16" Type M Male	9/16" MP Male	20,000	1400
28433	1" Type M Male	1" MP Male	20,000	1400
28629	1" Type M Male	3/4" MP Male	20,000	1400
28631	1" Type M Male	9/16" MP Male	20,000	1400
29063	3/4" Type M Male	1" MP Male	20,000	1400
29064	3/4" Type M Male	3/4" MP Male	20,000	1400
28350	3/4" Type M Male	9/16" MP Male	20,000	1400
29065	3/4" Type M Male	3/8" MP Male	20,000	1400
29066	9/16" Type M Male	1" MP Male	20,000	1400
28804	9/16" Type M Male	3/4" MP Male	20,000	1400
28193	9/16" Type M Male	9/16" MP Male	20,000	1400
28192	9/16" Type M Male	3/8" MP Male	20,000	1400
28328	9/16" Type M Male	1/4" MP Male	20,000	1400

* See details on all connection types beginning on page I-2.

FITTINGS & GAUGES

UP TO 15,000 PSI (1000 BAR)



JETSTREAM HHP MALE ADAPTERS

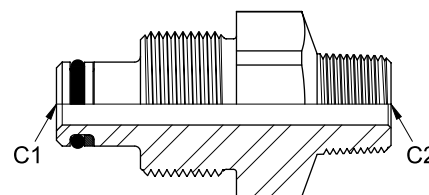
For use with 5015Q pumps, the Jetstream HHP connection features an easily replaceable seal to prevent wear or damage to the manifold and a large bore to minimize pressure drop through fittings.

- Copper plated for galling resistance
- Stainless steel

JETSTREAM HHP MALE TO PIPE THREAD MALE (NPT) ADAPTERS

Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
56863	Jetstream HHP Male	1" NPT Male	10,000	700
56862	Jetstream HHP Male	3/4" NPT Fml	15,000	1000

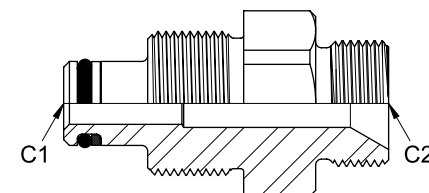
* See details on all connection types beginning on page I-2.



JETSTREAM HHP MALE TO TYPE M MALE ADAPTERS

Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
54844	Jetstream HHP Male	1-5/16" Type M Male	20,000	1400
55296	Jetstream HHP Male	1" Type M Male	20,000	1400

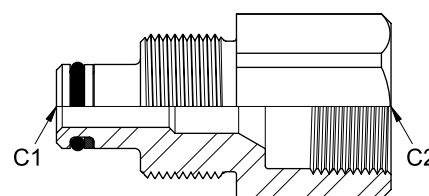
* See details on all connection types beginning on page I-2.



JETSTREAM HHP MALE TO MEDIUM PRESSURE FEMALE ADAPTERS

Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
54846	Jetstream HHP Male	1" MP Female	20,000	1400

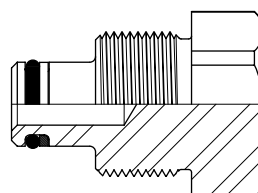
* See details on all connection types beginning on page I-2.



JETSTREAM HHP MALE PLUG

Part No.	Connection Type*	Maximum Operating Pressure	
		psi	bar
54847	Jetstream HHP Male	20,000	1400

* See details on all connection types beginning on page I-2.



Replacement Parts

Part No. 26523 O-Ring

Part No. 54854 Backup Ring

FITTINGS & GAUGES

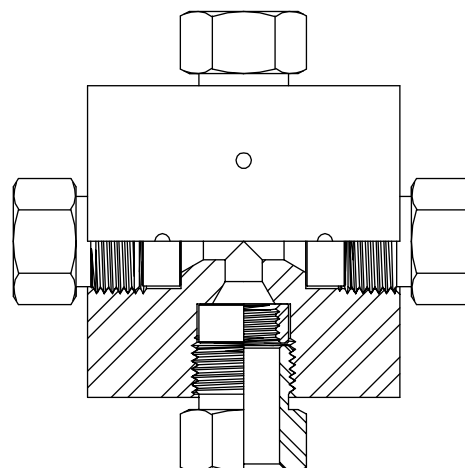
UP TO 15,000 PSI (1000 BAR)

MEDIUM PRESSURE CROSSES

- All medium pressure crosses include gland nuts and collars
- Stainless steel

Part No.	Connection Type*	Maximum Operating Pressure	
		psi	bar
28301	1" MP Female	20,000	1400
29067	3/4" MP Female	20,000	1400
27969	9/16" MP Female	20,000	1400
29068	3/8" MP Female	20,000	1400
29069	1/4" MP Female	20,000	1400

* See details on all connection types beginning on page I-2.

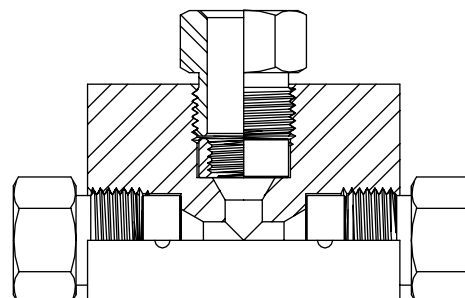


MEDIUM PRESSURE TEES

- All medium pressure tees include gland nuts and collars
- Stainless steel

Part No.	Connection Type*	Maximum Operating Pressure	
		psi	bar
29070	1" MP Female	20,000	1400
29071	3/4" MP Female	20,000	1400
27966	9/16" MP Female	20,000	1400
27964	3/8" MP Female	20,000	1400
29072	1/4" MP Female	20,000	1400

* See details on all connection types beginning on page I-2.

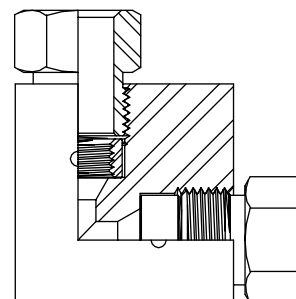


MEDIUM PRESSURE ELBOWS

- All medium pressure elbows include gland nuts and collars
- Stainless steel

Part No.	Connection Type*	Maximum Operating Pressure	
		psi	bar
29073	1" MP Female	20,000	1400
29074	3/4" MP Female	20,000	1400
28184	9/16" MP Female	20,000	1400
27997	3/8" MP Female	20,000	1400
29075	1/4" MP Female	20,000	1400

* See details on all connection types beginning on page I-2.



FITTINGS & GAUGES

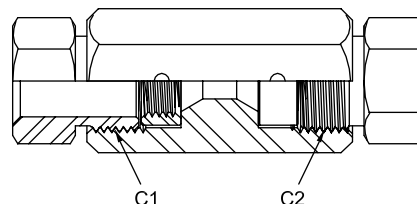
UP TO 15,000 PSI (1000 BAR)



MEDIUM PRESSURE STRAIGHT COUPLINGS

- All medium pressure straight couplings include gland nuts and collars
- Stainless steel

Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
28341	1" MP Female	1" MP Female	20,000	1400
29076	1" MP Female	3/4" MP Female	20,000	1400
29077	1" MP Female	9/16" MP Female	20,000	1400
28382	3/4" MP Female	3/4" MP Female	20,000	1400
29078	3/4" MP Female	9/16" MP Female	20,000	1400
29079	3/4" MP Female	3/8" MP Female	20,000	1400
27009	9/16" MP Female	9/16" MP Female	20,000	1400
28189	9/16" MP Female	3/8" MP Female	20,000	1400
28188	9/16" MP Female	1/4" MP Female	20,000	1400
28185	3/8" MP Female	3/8" MP Female	20,000	1400
28187	3/8" MP Female	1/4" MP Female	20,000	1400
29080	1/4" MP Female	1/4" MP Female	20,000	1400



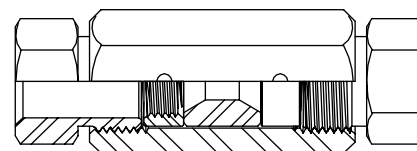
* See details on all connection types beginning on page I-2.

MEDIUM PRESSURE UNION COUPLINGS

Union couplings feature a removable seat insert that allows the fitting to slip over one end of the tubing for ease of installation in confined spaces or rigid piping applications.

- All medium pressure union couplings include gland nuts and collars
- Stainless steel

Part No.	Connection Type*	Maximum Operating Pressure	
		psi	bar
29081	1" MP Female	20,000	1400
29082	3/4" MP Female	20,000	1400
29083	9/16" MP Female	20,000	1400
29084	3/8" MP Female	20,000	1400
29119	1/4" MP Female	20,000	1400



* See details on all connection types beginning on page I-2.

FITTINGS & GAUGES

UP TO 15,000 PSI (1000 BAR)

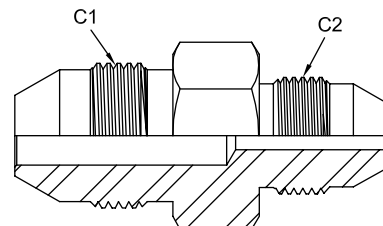


MEDIUM PRESSURE MALE CONNECTORS

Stainless steel

Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
29085	1" MP Male	1" MP Male	20,000	1400
29086	1" MP Male	3/4" MP Male	20,000	1400
29087	1" MP Male	9/16" MP Male	20,000	1400
29088	3/4" MP Male	3/4" MP Male	20,000	1400
29089	3/4" MP Male	9/16" MP Male	20,000	1400
29090	3/4" MP Male	3/8" MP Male	20,000	1400
29715	3/4" MP Male	1/4" MP Male	20,000	1400
29091	9/16" MP Male	9/16" MP Male	20,000	1400
29092	9/16" MP Male	3/8" MP Male	20,000	1400
29093	9/16" MP Male	1/4" MP Male	20,000	1400
28191	3/8" MP Male	3/8" MP Male	20,000	1400
28190	3/8" MP Male	1/4" MP Male	20,000	1400
29094	1/4" MP Male	1/4" MP Male	20,000	1400

* See details on all connection types beginning on page I-2.

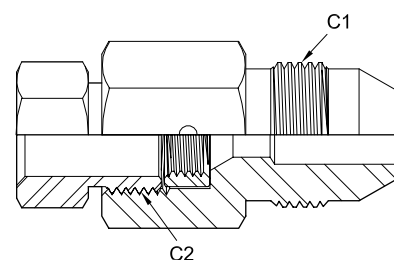


MEDIUM PRESSURE MALE TO MEDIUM PRESSURE FEMALE CONNECTORS

Stainless steel

Part No.	Connection Types*		Maximum Operating Pressure	
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
29095	1" MP Male	3/4" MP Female	20,000	1400
28797	1" MP Male	9/16" MP Female	20,000	1400
28462	3/4" MP Male	9/16" MP Female	20,000	1400
29096	3/4" MP Male	3/8" MP Female	20,000	1400
28186	9/16" MP Male	3/8" MP Female	20,000	1400
28726	9/16" MP Male	1/4" MP Female	20,000	1400
29097	3/8" MP Male	1/4" MP Female	20,000	1400

* See details on all connection types beginning on page I-2.



FITTINGS & GAUGES

UP TO 15,000 PSI (1000 BAR)



MEDIUM PRESSURE NIPPLES

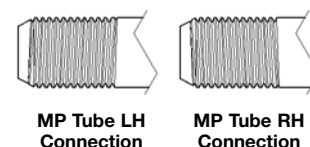
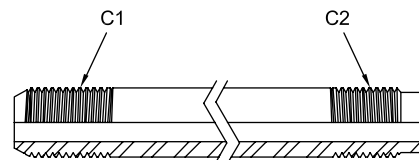
- High tensile strength, cold drawn stainless steel
- Glands and collars not included





Left-hand Medium Pressure Tubing (MP Tube LH):

For use in standard medium pressure connections (using glands and collars) or with lance fittings (no glands and collars) or tube nozzles that have medium pressure, left-handed female threads. Available in 1/4" to 1" sizes.

Right-hand Medium Pressure Tubing (MP Tube RH):

For use with lance fittings (no glands and collars) or tube nozzles that have medium pressure, right-handed female threads. Available in 1/4" to 3/4" sizes.




Part No. <small>Specify length (in inches) in place of "XX"</small>	Connection Types* 		O.D. 		I.D. 		Max. Working Pressure 	
	Connection 1 (C1)	Connection 2 (C2)	in	mm	in	mm	psi	bar
29013-XX	1" MP Tube LH Male	1" MP Tube LH Male	.990	25.1	.688	17.5	20,000	1400
29108-XX	3/4" MP Tube LH Male	3/4" MP Tube LH Male	.740	18.8	.438	11.1	20,000	1400
29109-XX	3/4" MP Tube LH Male	3/4" MP Tube RH Male	.740	18.8	.438	11.1	20,000	1400
29110-XX	3/4" MP Tube RH Male	3/4" MP Tube RH Male	.740	18.8	.438	11.1	20,000	1400
27968-XX	9/16" MP Tube LH Male	9/16" MP Tube LH Male	.553	14.0	.312	7.9	20,000	1400
54769-XX	9/16" MP Tube LH Male	9/16" MP Tube RH Male	.553	14.0	.312	7.9	20,000	1400
54781-XX	9/16" MP Tube RH Male	9/16" MP Tube RH Male	.553	14.0	.312	7.9	20,000	1400
27960-XX	3/8" MP Tube LH Male	3/8" MP Tube LH Male	.368	9.3	.203	5.2	20,000	1400
54783-XX	3/8" MP Tube LH Male	3/8" MP Tube RH Male	.368	9.3	.203	5.2	20,000	1400
54784-XX	3/8" MP Tube RH Male	3/8" MP Tube RH Male	.368	9.3	.203	5.2	20,000	1400
54787-XX	1/4" MP Tube LH Male	1/4" MP Tube LH Male	.245	6.2	.109	2.8	20,000	1400
54788-XX	1/4" MP Tube LH Male	1/4" MP Tube RH Male	.245	6.2	.109	2.8	20,000	1400
54789-XX	1/4" MP Tube RH Male	1/4" MP Tube RH Male	.245	6.2	.109	2.8	20,000	1400

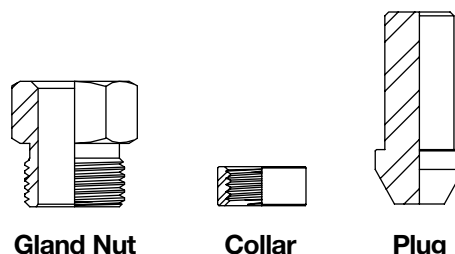
* See details on all connection types beginning on page I-2.

Related Items

NIPPLES — PIPE THREAD (NPT) — See page F-8

MEDIUM PRESSURE GLAND NUTS, COLLARS AND PLUGS

Connection Type* 	Part No.		
	Gland Nut	Collar	Plug
1" MP Male	28731	28732	29100
3/4" MP Male	28383	28384	29101
9/16" MP Male	26645	26635	27973
3/8" MP Male	28181	28180	28229
1/4" MP Male	29098	29099	29102



* See details on all connection types beginning on page I-2.


FITTINGS & GAUGES

UP TO 15,000 PSI (1000 BAR)

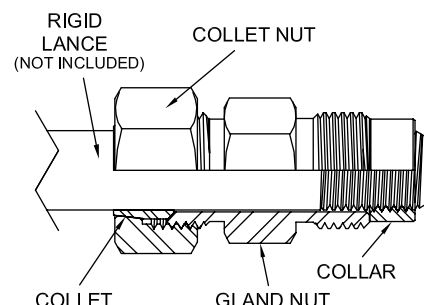


MEDIUM PRESSURE ANTI-VIBRATION GLAND ASSEMBLIES

Used to reduce stress on tubing threads in conditions where bending or vibration are present, anti-vibration gland assemblies feature a collet that clamps onto the tubing when the connection is tightened to provide extra support and strength.

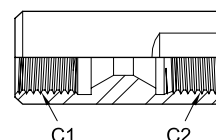
Assembly Part No.	Connection Type* 	Replacement Part No.			
		Gland Nut	Collet	Collar	Collet Nut
29103	1" MP Male	29103G	29103C	28732	29103R
29104	3/4" MP Male	29104G	29104C	28384	29104R
28268	9/16" MP Male	28268G	28268C	26635	28268R
29105	3/8" MP Male	29105G	29105C	28180	29105R
29106	1/4" MP Male	29106G	29106C	29099	29106R




* See details on all connection types beginning on page I-2.



MEDIUM PRESSURE SLIMLINE LANCE COUPLINGS

- Used to couple medium pressure rigid and flex lances without the use of glands and collars, allowing them to fit into tubes
- Additional couplings available by request
- Heat-treated stainless steel



Part No.	Connection Types* 		O.D. (D) 		Max. Working Pressure 	
	Connection 1 (C1)	Connection 2 (C2)	in	mm	psi	bar
28668	9/16" MP Tube LH Female	9/16" MP Tube LH Female	.750	19.1	20,000	1400
29111	9/16" MP Tube LH Female	9/16" MP Tube RH Female	.750	19.1	20,000	1400
29112	9/16" MP Tube RH Female	9/16" MP Tube RH Female	.750	19.1	20,000	1400
28349	9/16" MP Tube LH Female	3/8" MP Tube LH Female	.750	19.1	20,000	1400
28314	9/16" MP Tube RH Female	3/8" MP Tube RH Female	.750	19.1	20,000	1400
28667	3/8" MP Tube LH Female	3/8" MP Tube LH Female	.500	12.7	20,000	1400
29113	3/8" MP Tube LH Female	3/8" MP Tube RH Female	.500	12.7	20,000	1400
29114	3/8" MP Tube RH Female	3/8" MP Tube RH Female	.500	12.7	20,000	1400
28315	3/8" MP Tube RH Female	1/4" MP Tube RH Female	.500	12.7	20,000	1400
28666	1/4" MP Tube LH Female	1/4" MP Tube LH Female	.375	9.5	20,000	1400
28700	1/4" MP Tube LH Female	1/4" MP Tube RH Female	.375	9.5	20,000	1400
29115	1/4" MP Tube RH Female	1/4" MP Tube RH Female	.375	9.5	20,000	1400

* See details on all connection types beginning on page I-2.

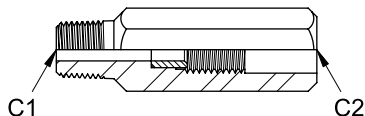
FITTINGS & GAUGES



UP TO 15,000 PSI (1,000 BAR)



RIGID LANCE ADAPTERS — MACHINE SCREW FEMALE TO PIPE THREAD MALE (NPT MALE)

- Used to connect small diameter rigid lances with machine screw threads (see page D-11) to pipe threaded hoses and fittings
- Stainless steel
- Copper plated for galling resistance



Part No.	Connection Types*		Maximum Operating Pressure	
				
	Connection 1 (C1)	Connection 2 (C2)	psi	bar
51039	1/8" NPT Male	1/4-28UNF Female	10,000	700
51041	1/8" NPT Male	5/16-24UNF Female	10,000	700
51043	1/8" NPT Male	3/8-24UNF Female	10,000	700

* See details on all connection types beginning on page I-2.



Related Items

RIGID LANCES: MACHINE SCREW THREADS — See page D-11

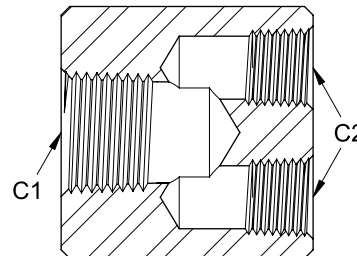
MS NOZZLES — See page E-28

DUAL LANCE MANIFOLDS — PIPE THREAD (NPT)

- Allows simultaneous operation of two lances
- Stainless steel

Part No.	Connection Types*		Maximum Operating Pressure	
				
	Inlet Connection (C1)	Outlet Connection (C2)	psi	bar
50999	1/2" NPT Fml	1/4" NPT Fml	15,000	1000
50585	1/2" NPT Fml	1/8" NPT Fml	15,000	1000
51401	1/2" NPT Fml	1/16" NPT Fml	15,000	1000

* See details on all connection types beginning on page I-2.



Related Items

RIGID LANCES: PIPE THREADS — See page D-10

SAFETY

UP TO 15,000 PSI (1000 BAR)

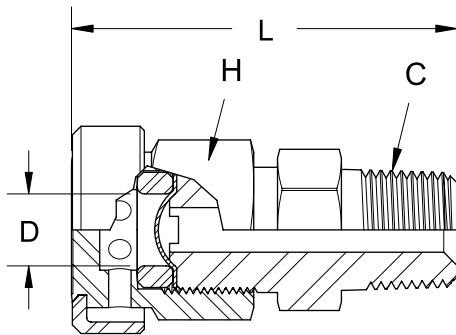


RUPTURE DISC HOLDERS

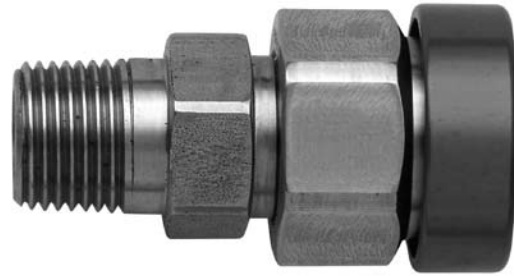
For protection from dangerous over-pressurization rupture discs function in a waterblast system analogous to the function of fuses in an electrical circuit. When the system pressure exceeds that of the burst disc, the disc bursts and allows water to flow out of the holder's cap, relieving the system of high pressure.

- May be used as primary and/or secondary relief devices
- Tamper-resistant design
- Discs are quickly and easily replaceable
- Assembly components machined from high quality stainless steel

NOTE: Burst Disc not included with assembly.



Part No. 51035



Disc Selection

For **primary** relief devices, select disc with burst pressure of approximately **1.2 times** desired operating pressure.

Example

Operating pressure: 10,000 psi (700 bar)

Desired burst pressure: 10,000 psi x 1.2 = 12,000 psi

700 bar x 1.2 = 840 bar

Select 12,000 psi (827 bar) Burst Disc, part no. 51049

For **secondary** relief devices, select disc with burst pressure of approximately **1.4 times** desired operating pressure.

Example

Operating pressure: 10,000 psi (700 bar)

Desired burst pressure: 10,000 psi x 1.4 = 14,000 psi

700 bar x 1.4 = 980 bar

Select 14,000 psi (965 bar) Burst Disc, part no. 51050

Part No.	Connection Type* (C)	Overall Length (L)		Disc Blow Out Diameter (D)		Flats (H)		Maximum Working Pressure	
		in	mm	in	mm	in	mm	psi	bar
51035	1/2" NPT Male	2.7	69	.50	12.7	1.25	31.8	15,000	1000

* See details on all connection types beginning on page I-2.

Burst Discs

See Disc Selection instructions above.

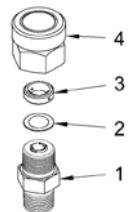
Part No.	Burst Disc Pressure	
	psi	bar
53738	6,000	414
51047	8,000	552
51048	10,000	690
51049	12,000	827
51050	14,000	965
51051	16,000	1103
55316	18,000	1241
51052	20,000	1379



Replacement Parts

Item	Part No.	Description
1	51033	Base
2	**	Burst Disc
3	51040	Hold-Down Ring
4	51037	Cap

** See Burst Discs chart at left



SAFETY

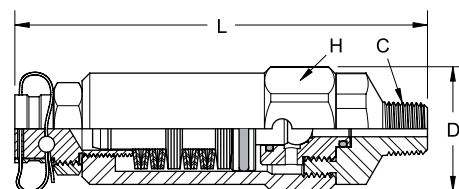
UP TO 15,000 PSI (1000 BAR)



SEVERE SERVICE RELIEF VALVES

For use as a primary relief device to protect waterblast systems and operators from dangerous overpressurization, the Severe Service Relief Valve opens to safely bypass some of the system flow in circumstances where the operating pressure exceeds the factory set opening pressure of the valve.

- Designed for rigorous service and low maintenance
- Valves constructed with carbide or stainless steel ball and hardened stainless steel seat for long service life
- Cartridge style ball-seat valve and spring assemblies allow fast, simple field repair without affecting relief pressure setting
- Shipped from the factory preset and tested at customer specified opening pressure



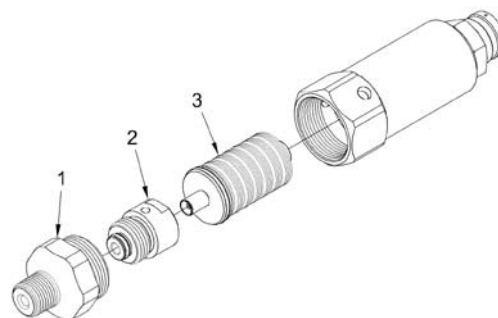
Part No.	Connection Type* (C)	Overall Length		Diameter		Ball Material	Relief Pressure Range **		Maximum Working Pressure	
		in	mm	in	mm		psi	bar	psi	bar
51470A	1/2" NPT Male	6.5	165	1.94	49.3	Carbide	0 — 6,000	0 — 415	5,000	350
51470B	1/2" NPT Male	6.5	165	1.94	49.3	Carbide	6,000 — 12,000	415 — 825	10,000	700
51470C	1/2" NPT Male	6.5	165	1.94	49.3	Carbide	12,000 — 18,000	825 — 1240	15,000	1000
51945A	3/4" NPT Male	6.7	170	1.94	49.3	Carbide	0 — 6,000	0 — 415	5,000	350
51945B	3/4" NPT Male	6.7	170	1.94	49.3	Carbide	6,000 — 12,000	415 — 825	10,000	700
51945C	3/4" NPT Male	6.7	170	1.94	49.3	Carbide	12,000 — 18,000	825 — 1240	15,000	1000
51460A	1" NPT Male	7.9	200	2.20	55.9	Stainless Steel	0 — 6,000	0 — 415	5,000	350
51460B	1" NPT Male	7.9	200	2.20	55.9	Stainless Steel	6,000 — 12,000	415 — 825	10,000	700

* See details on all connection types beginning on page I-2.

** Relief pressure must be specified when ordering.

Replacement Parts

Item	Part No.	Description
1	51452	Base, 1/2" NPT Male
	51822	Base, 3/4" NPT Male
	51441	Base, 1" NPT Male
2	51500	Ball-Seat Cartridge, 1/2" & 3/4"
	51486	Ball-Seat Cartridge, 1"
3	51477	Spring Cartridge, 1/2" & 3/4", A Models
	51482	Spring Cartridge, 1/2" & 3/4", B Models
	51484	Spring Cartridge, 1/2" & 3/4", C Models
	51468	Spring Cartridge, 1", A Model
	51472	Spring Cartridge, 1", B Model



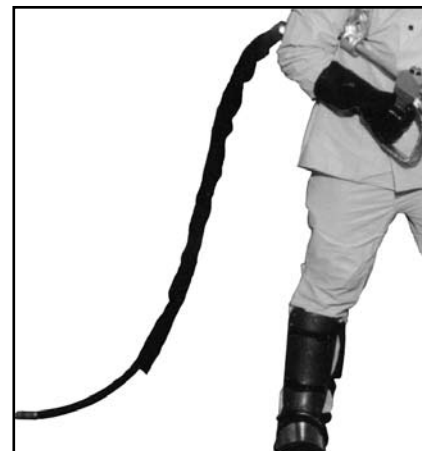
SAFETY

UP TO 15,000 PSI (1000 BAR)

SAFETY SHROUDS & WHIP HOSES

Safety shroud and whip hose sets provide necessary hand gun operator protection against dangerous hose failures.

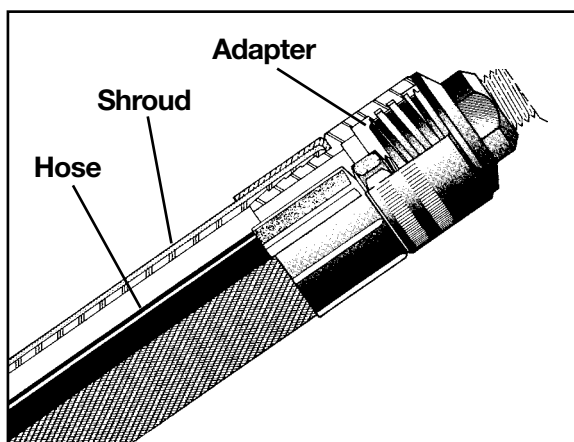
- Includes safety shroud, whip hose and adapter
- 3 ft (1 m) safety shrouds enclose the portion of the hose nearest the operator's body. Cordura over braided stainless steel construction.
- 6 ft (1.8 m) whip hoses should be changed periodically to ensure that the hose nearest the operator's body is always in good condition.
- Plated steel adapters connect whip hose and shroud to gun.



SHROUD & WHIP SETS

Part No.	Inlet Connection (to Hose)*	Outlet Connection (to Gun)*	Hose I.D.		Length		Max. Operating Pressure		Includes		
			in	mm	ft	m	psi	bar	Whip Hose	Shroud	Adapter
54060	1/2" NPT Male	1/2" NPT Fml	.50	12.7	6	1.8	15,000	1000	52241-0060505	50288-03	50290
54065	1/2" NPT Male	1/2" NPT Fml	.50	12.7	6	1.8	10,000	700	25513-0060505	50796-03	50109

* See details on all connection types beginning on page I-2.



SAFETY SHROUD ADAPTERS

Part No.	Inlet Connection (to Hose)*	Outlet Connection (to Gun)*	Max. Operating Pressure	
			psi	bar
50290	1/2" NPT Fml	1/2" NPT Fml	15,000	1000
50408	3/8" NPT Fml	1/2" NPT Fml	15,000	1000
50109	1/2" NPT Fml	1/2" NPT Fml	10,000	700
51103	3/8" NPT Fml	1/2" NPT Fml	10,000	700

* See details on all connection types beginning on page I-2.

SAFETY SHROUDS

Part No.	Length		Max. Operating Pressure	
	ft	mm	psi	bar
50288-03	3	0.9	15,000	1000
50288-06	6	1.8	15,000	1000
50796-03	3	0.9	10,000	700
50796-06	6	1.8	10,000	700

6 FT (1.8 M) WHIP HOSES

Part No.	Connection*	Hose I.D.		Max. Operating Pressure	
		in	mm	psi	bar
52241-0060505	1/2" NPT Male	.50	12.7	15,000	1000
52178-0060404	3/8" NPT Male	.38	9.5	15,000	1000
25513-0060505	1/2" NPT Male	.50	12.7	10,000	700
25576-0060404	3/8" NPT Male	.38	9.5	10,000	700

* See details on all connection types beginning on page I-2.

Related Items

DURASAFE™ HAND GUNS — See pages C-1 – C-6

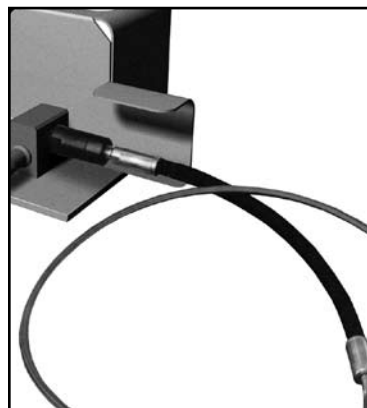
SAFETY

UP TO 15,000 PSI (1000 BAR)

STRAIN RELIEF HOSE

Used for flex lance applications, the strain relief hose prevents kinking of the flex lance to extend service life.

- Rubber hose material is more flexible and manageable than thermoplastic flex lance material
- Connects the foot control gun and the flex lance



Part No.	Length		Inlet Connection* (to Foot Gun)	Outlet Connection* (to Flex Lance)	Hose I.D.		Max. Operating Pressure	
	ft	m			in	mm	psi	bar
50135	3	0.9	1/2" NPT Male	1/4" NPT Fml	.50	12.7	15,000	1000
50138	3	0.9	1/2" NPT Male	1/8" NPT Fml	.50	12.7	15,000	1000

* See details on all connection types beginning on page I-2.

Related Items

FLEX LANCES — See pages D-4 – D-6

HOSE CHECKS

Installed on hose ends to prevent injury by restraining the hose in the event of an end fitting failure.

Steel Hose Checks

Manufactured from galvanized high tensile wire rope with spring-loaded retainers for easy installation and removal.

For 1" I.D. hoses or larger: Part No. 53412

Hoses smaller than 1" I.D.: Part No. 52242



Steel Hose Check

Nylon Hose Checks

Made from durable strap with extra-heavy stitching. Fits any high pressure hose.

Part No. 27863



Nylon Hose Check

SAFETY

UP TO 15,000 PSI (1000 BAR)

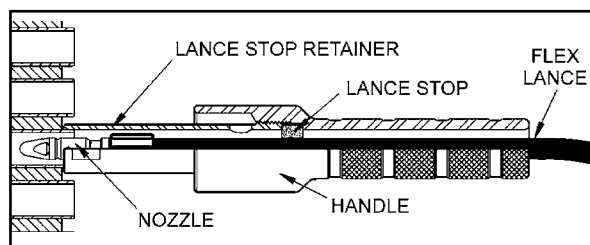
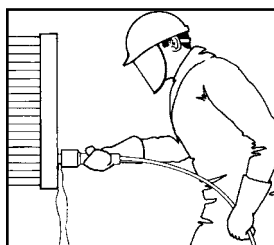


FLEX LANCE SAFETY GRIP

For use in flex lance tube cleaning operations, the safety grip prevents a nozzle from unexpectedly exiting a tube by providing a stop through which the sleeve of the flex lance will not pass. Package includes handle, lance stop retainer for use on tubes up to 3/4" O.D., and the three most commonly used lance stops.



Part No. 54164



Flex Lance Safety Grip Part No. 54164

SAFETY GRIP ACCESSORIES

Lance Stops

Choose lance stops below based on flex lance inside diameter.



Lance Stops

Lance Stop Part No.	Flex Lance Series No.	Flex Lance Nominal I.D.	
		in	mm
51779	27560	5/16	8
51044*	26108	1/4	6
51038*	26106	3/16	5
51036*	26104	5/32	4
	28596	1/8	3

* Included in package above

Safety Grip Shield

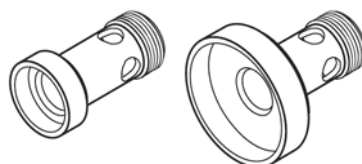
Clear, plastic shield attaches to the safety grip handle to deflect water exiting the tube away from the operator.

Part No. J55785



Lance Stop Retainers

Choose lance stop retainers based on the outside diameter of the tube to be cleaned.



Lance Stop Retainers

Part No.	Length
51055	for tubes up to 3/4" O.D. (included in package)
51425	for tubes up to 1" O.D.
51427	for tubes up to 2" O.D.

SAFETY

SAFETY

UP TO 15,000 PSI (1000 BAR)

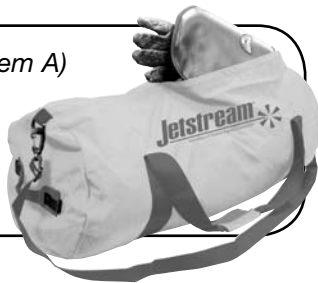
TURTLESKIN WATERARMOR

TurtleSkin® WaterArmor provides waterblast operators with the highest level of protection available from high-pressure waterjets. Its patented fabric has the tightest weave ever achieved in aramid, a fiber two times the strength of steel and five times lighter.

- Proven protection up to 40,000 psi (2750 bar)
- Lightweight, hinged panel design provides flexibility without fatigue
- One-size-fits-all money-saving design
- Modular design — buy only what you need
- Open back keeps operator cooler longer
- Built-in knee pad for added comfort when kneeling



Safety Suit (Item A) includes 30" duffel bag for storage and transport.



Item (s)	Part No.	Description
A	27885C*	Safety Suit — Torso & Chaps
B	27884	Gaiters (Shins & Feet)
C	28589	Gauntlets (Hands & Forearms)

* Includes duffel bag

SAFETY

SAFETY

UP TO 15,000 PSI (1000 BAR)

EYEWEAR



PREMIUM SAFETY GLASSES

- Stylish design
- Adjustable nose pad
- Rubber coated temple tips
- Scratch resistant, UV-blocking coating
- Anti-fog lens vent
- Z87+ approved

Part No. Lens/Frame

J70316 Clear/Gray

J70317 Gray/Gray



ECONOMY SAFETY GLASSES

- Scratch resistant, UV-blocking coating
- Z87+ approved

Part No. Lens/Frame

J70318 Clear/Frosted



SAFETY GOGGLES

- Soft-frame with indirect ventilation
- Impact and chemical splash protection
- Anti-fog coating
- Neoprene strap
- Z87+ approved

Part No.

25620

GLOVES



14" PVC/NITRILE GLOVES

- Excellent chemical resistance
- Fully coated with jersey lining
- Rough finish
- Size 10

Part No.

25624



12" PVC GLOVES

- Cotton lining
- Rough finish
- Size 10

Part No.

J70327

PROTECTIVE CLOTHING



WATERBLAST SUIT

- PVC/Polyester
- Bib overall pants
- Hooded jacket with storm fly
- Face shield bib with Velcro® strip
- Sizes M to 5XL

Part No.

J70323-size

Face shield, visor and hard hat sold separately.



RAIN SUIT

- PVC/Polyester
- Bib overall pants
- Jacket with removable hood
- Sizes M to 7XL

Part No.

25617-size

SAFETY

UP TO 15,000 PSI (1000 BAR)



HARD HATS

- Lightweight polyethylene with impact-absorbing ridges and rain trough
- Six-point nylon suspension with ratchet knob or pin-lock adjustment
- Washable soft brow pad
- Universal accessory slot
- White
- ANSI Z89.1-2003 Type I, Class G & E



Part No.	Adjustment
J70315	Ratchet knob
25625	Pin-lock

FACE PROTECTION



UNIVERSAL FACE SHIELD BRACKET

- Fits over the brim of most cap-style hard hats and retains with strap
- Face shields sold separately
- Plastic

Part No.
25621

FACE SHIELDS

- Polycarbonate
- 8"h x 15-1/2"w x 0.040"
- Multiple mounting slots allow use with most bracket models
- Shields with Velcro® strip intended for use with waterblast suits with face shield bibs



Part No.	Style
26255	Clear
26255T	Tinted
26255V	Clear w/ Velcro®

HEARING PROTECTION



EAR PLUGS

- Molded polyurethane foam
- Noise Reduction Rating (NRR)
Uncorded: 33 Corded: 30

Part No.	Type/Qty
J70321	Uncorded/200 pr.
J70322	Corded/100 pr.

FOOT AND LEG PROTECTION

PREMIUM 16" RUBBER KNEE BOOTS

- Steel toe
- Anchored metatarsal guard
- Stainless steel midsoles resist puncture
- Removable and washable cushioned insoles
- Waterproof
- Meets ANSI Z41 PT99 Sect 1, 2 & 5
- Made in U.S.A.
- Black and yellow
- Sizes 6-14



Part No.
J70324-size

ECONOMY 16" RUBBER KNEE BOOTS

- Steel toe
- Waterproof
- Black
- Sizes 7-13



Part No.
27168-size

12" NEOPRENE BOOTS

- Steel toe
- Very resistant to both organic and inorganic chemicals
- Suction-gripping neoprene tread patterns lock on to slick floors
- Tough, comfortable fabric lining
- Cushion insoles reduce fatigue for all-day comfort
- Waterproof
- Copper/tan
- Meets ANSI Z41 PT 99 Sect 1
- Made in U.S.A.
- Sizes 6-14



Part No.
J70326-size

SHIN & FOOT GUARDS

- Aluminum guards provide protection for shins and feet
- Padded instep
- Nylon straps
- One size fits all



Part No.
26894

SAFETY

UP TO 15,000 PSI (1000 BAR)



BARRICADES AND SIGNS

SIGNS



"Health Hazard" Caution Sign

8-1/2" x 11"

Part No. 26247



"Restricted" Caution Sign

8-1/2" x 11"

Part No. 26253



"Waterblasting" Danger Sign

8-1/2" x 11"

Part No. 25614



Safety Warning Sticker: "Always Wear Your Safety Gear"

Part No. 28501

BARRICADES



"Caution: Waterblasting In Progress" Safety Tape

- Barricade tape
- Yellow
- 3" x 300' (75 mm x 90 m) roll

Part No. 26444



"Danger: Hydroblasting" Safety Tape

- Barricade tape
- Red
- 3" x 1000' (75 mm x 300 m) roll

Part No. J70413

MEDIA



SAFETY VIDEO

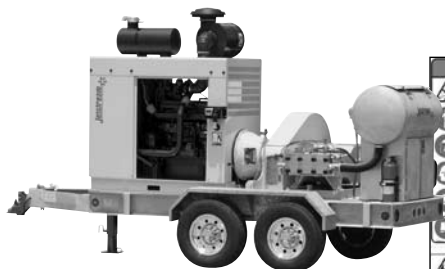
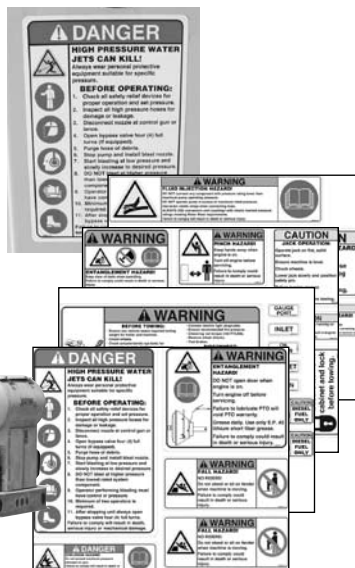
An essential training tool for anyone working in or around waterblasting, this video provides in-depth information for basic waterblast safety with emphasis on operation, pumps, equipment and applications. Available in several formats.

Part No.	Format
27019	VHS (NTSC format: North America)
27019P	VHS (PAL format)
28632	DVD
28633	Video CD

SAFETY WARNING DECAL SET

Created to promote safe use of waterblasting equipment, this comprehensive decal package provides important warnings and instructions applicable to any waterblast unit.

Part No. 29902



SURFACE CLEANERS

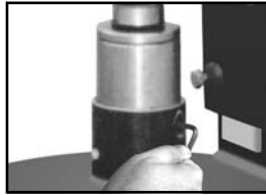
UP TO 15,000 PSI (1000 BAR)



HYDRO-MOWER SURFACE CLEANER

Used to clean large horizontal surfaces with four powerful, self-rotating jets, Jetstream Hydro-Mowers are designed for efficiency, ease of use, fast maintenance, safety and versatility. They are ideal for any job, from grate and floor cleaning to stripping paint and rubber.

- Swivel speed can be adjusted from 50 to 800 RPM using a standard Allen wrench. No fluid changes. No "hit or miss" spray arm angle adjustments.



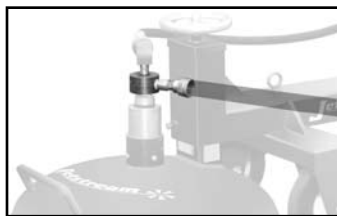
- Swivel Seal Cartridge is easily removable, unlike plastic-only swivel seals that often must be pried from swivel bores. Maintenance cost is reduced by integrating a portion of the swivel shaft into the seal cartridge, preventing wear to the main shaft.



- Deck Height Adjustment wheel and cam lock allow distance between nozzles and surface to be easily and quickly optimized.



- Rotary Union increases maneuverability and reduces operator fatigue by acting as a pivot for a supply hose, eliminating the tiresome task of manually shifting hose position with each pass.



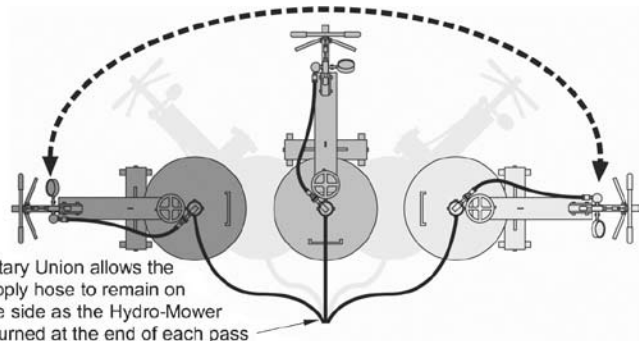
- Mechanically controlled dump valve provides safe, reliable control of pressure without air or electricity.

- Cartridge Style Design allows dump valve to be rebuilt in under a minute with no special tools.



- Pressure Gage mounted to dump valve on mower handle for operator convenience and safety.

- Adjustable Handle Height



SURFACE
CLEANERS

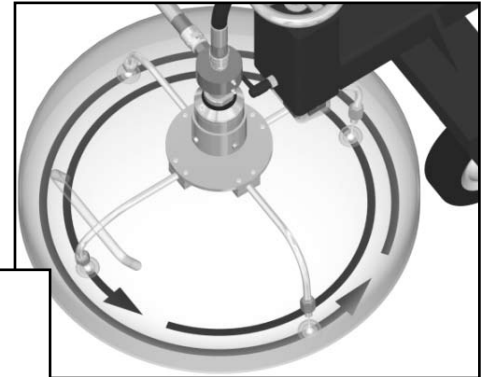
SURFACE CLEANERS

UP TO 15,000 PSI (1000 BAR)



HYDRO-MOWER SURFACE CLEANER

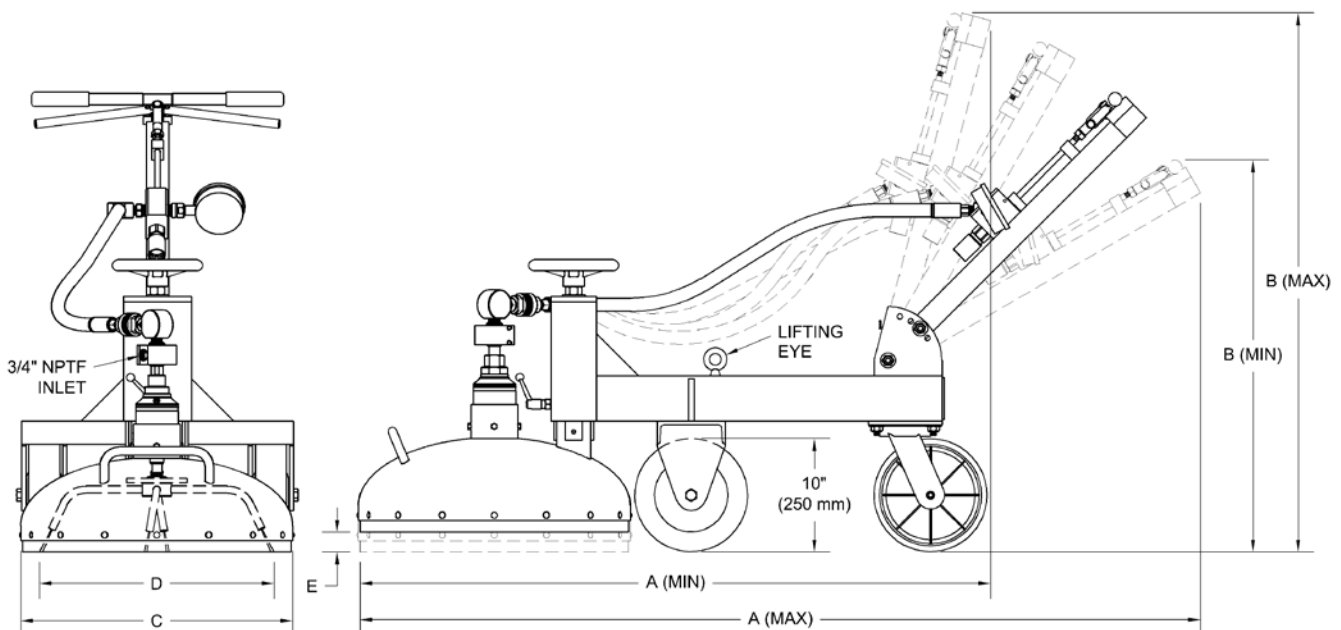
- Two mower sizes available
- Self rotating — no air required!
- Used with **RM Nozzles**
- Galvanized deck
- Hydro-Mowers utilize a four-jet **Spray Bar** that features two jets directed 15° inward and two jets directed 15° outward to create two rotating paths for maximum coverage while the jet angle is ideal for cleaning grates in paint booths.



Part No.	Head Diameter	Connections*		Speed Range	Weight		Maximum Flow**		Max. Operating Pressure	
		Inlet	Outlet (Nozzle)		lb	kg	gpm	lpm	psi	bar
52950	30"	3/4" NPT Fml	1/2"-28UNEF (RM)	50 – 800	375	170	40	150	15,000	1000
53000	24"	3/4" NPT Fml	1/2"-28UNEF (RM)	50 – 800	350	160	40	150	15,000	1000

* See details on all connection types beginning on page I-2.

** Flow is dependent upon operating pressure. Maximum flow shown is for 10,000 psi (700 bar) operation.



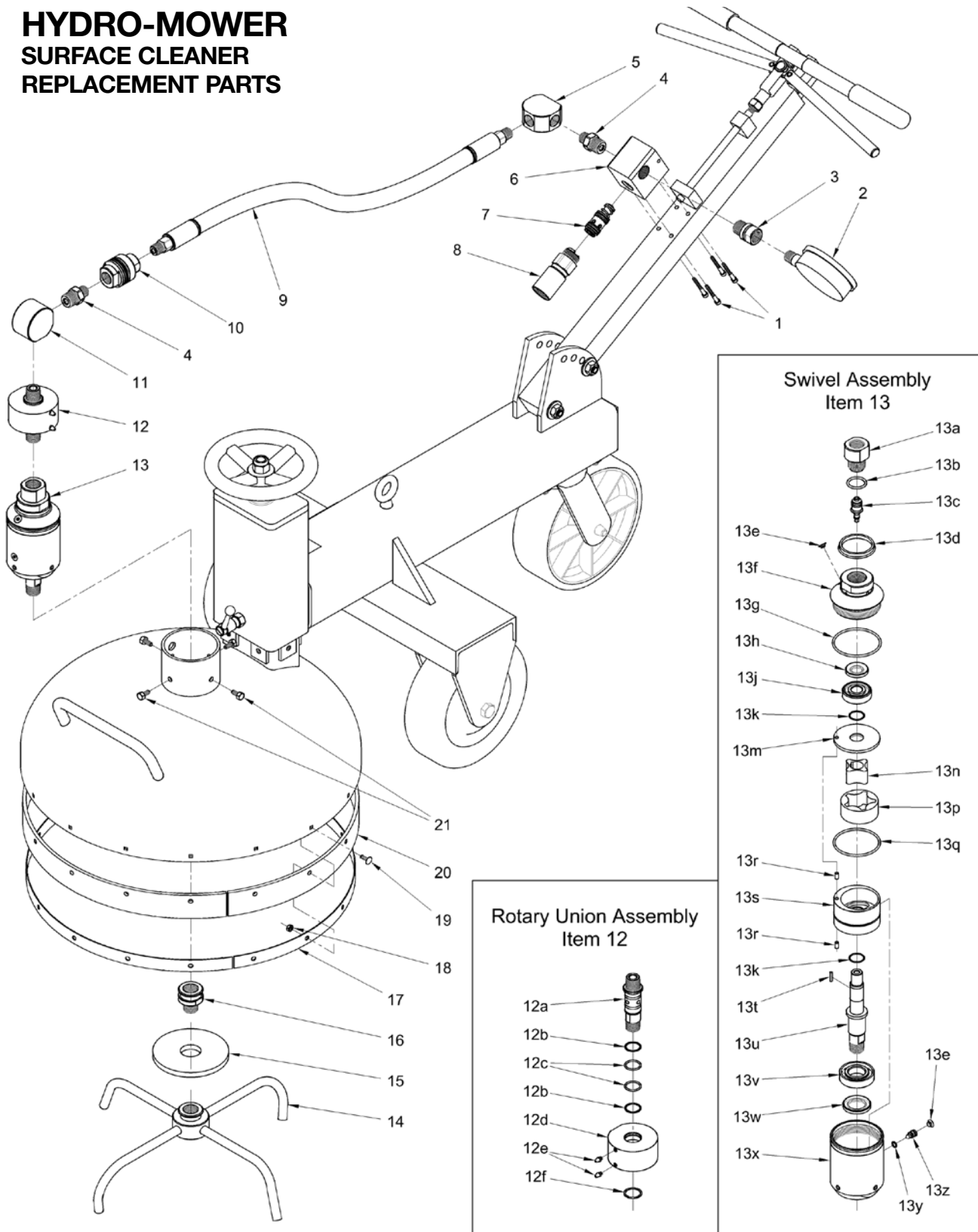
Mower Part No.	Overall Length Range (A)		Overall Height Range (B)		Overall Width (C)		Cleaning Path (D)		Deck Height Range (E)	
	in	cm	in	cm	in	cm	in	cm	in	cm
52950	59 – 77	150 – 197	35 – 47	88 – 120	30-1/4	77	26-1/4 – 27-1/4	67 – 69	0 – 2-1/2	0 – 6
53000	56 – 74	142 – 189	35 – 47	88 – 120	24-1/4	62	20 – 22-1/2	51 – 57	0 – 3-1/2	0 – 9

SURFACE CLEANERS

UP TO 15,000 PSI (1000 BAR)



HYDRO-MOWER SURFACE CLEANER REPLACEMENT PARTS



SURFACE
CLEANERS

SURFACE CLEANERS

UP TO 15,000 PSI (1000 BAR)



HYDRO-MOWER

SURFACE CLEANER REPLACEMENT PARTS

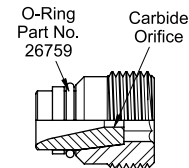
Item	Part No.	Description
1	27192	Capscrew
2	51126	Gauge
3	26065	3/4" x 1/2" Bushing
4	51702	3/4" x 1/2" Nipple
5	50300	1/2" Elbow
6	53549	Valve Body
7	51638	Diffuser
8	52750	C-15 Mag Cartridge
9	52241-0040505	Hose
10	51402	Twis-Lok Coupling
11	50336	3/4" Elbow
12	52825	Rotary Union
12a	52774	Shaft
12b	53429	Backup Ring
12c	26317	O-Ring
12d	52776	Body
12e	27492	Grease Zerk

Item	Part No.	Description
12f	27491	Retaining Ring
13	52820	Swivel Assembly
13a	53397	Seal Cap
13b	25229	O-Ring
13c	53410	Swivel Seal Cartridge
13d	27042	V-Ring Seal
13e	52819	Seal Screw
13f	53395	Swivel Cap
13g	27045	O-Ring
13h	27044	Oil Seal
13j	27048	Guide Bearing
13k	27046	O-Ring
13m	52756	Speed Control Cap
13n	52762	Inner Rotor
13p	27040	Outer Rotor
13q	27204	O-Ring
13r	52958	Hollow Pin
13s	52764	Speed Control Housing

Item	Part No.	Description
13t	27038	Pin
13u	53398	Shaft
13v	27049	Thrust Bearing
13w	27043	Oil Seal
13x	52753	Swivel Body
13y	27052	O-Ring
13z	52757	Speed Adjustment Screw
14	52796	Spray Bar, 30" Mower
	52995	Spray Bar, 24" Mower
15	26487	Deflector
16	53427	Extension (30" Model Only)
17	53097	Retaining Ring, 30" Mower
	53096	Retaining Ring, 24" Mower
18	26711	Nut
19	27073	Capscrew
20	53093	Splash Guard, 30" Mower
	53094	Splash Guard, 24" Mower
21	27160	Capscrew

RM NOZZLES

Hydro-Mowers use carbide RM Nozzles. See chart below for total flow through mower using four identically sized nozzles.



Part No.	Orifice Size	Flow (gpm) at specified pressures (psi)											Flow (lpm) at specified pressures (bar)							
		5,000	6,000	7,000	8,000	9,000	10,000	11,000	12,000	13,000	14,000	15,000	300	400	500	600	700	800	900	1000
52688	00	4.8	5.2	5.6	6.0	6.4	6.8	7.1	7.4	7.7	8.0	8.3	17	19	22	24	26	28	29	31
52452	0	6.4	7.0	7.6	8.1	8.6	9.1	9.5	9.9	10.4	10.7	11.1	23	26	29	32	35	37	39	41
52453	1	8.3	9.1	9.8	10.5	11.2	11.8	12.3	12.9	13.4	13.9	14.4	29	34	38	42	45	48	51	54
52454	2	11.0	12.1	13.0	13.9	14.8	15.6	16.4	17.1	17.8	18.5	19.1	39	45	50	55	59	64	67	71
52456	3	13.5	14.8	15.9	17.0	18.1	19.1	20.0	20.9	21.7	22.5	23.3	48	55	61	67	73	78	82	87
52457	4	16.2	17.7	19.1	20.4	21.7	22.9	24.0	25.0	26.1	27.0	28.0	57	66	74	81	87	93	99	104
52458	5	23.1	25.3	27.3	29.2	31.0	32.7	34.3	35.8	•	•	•	82	94	105	115	125	133	•	•
52459	6	30.3	33.2	35.9	38.3	40.7	•	•	•	•	•	•	107	124	138	151	•	•	•	•
52461	7	34.3	37.6	40.6	43.4	•	•	•	•	•	•	•	121	140	156	•	•	•	•	•
52462	8	37.4	41.0	44.3	•	•	•	•	•	•	•	•	132	153	171	•	•	•	•	•
52463	9	40.7	44.6	48.2	•	•	•	•	•	•	•	•	144	166	•	•	•	•	•	•

• Exceeds maximum allowable nozzle thrust

UNIT CONVERSIONS & FORMULAS

Measurement	Conversion	Example
Length	1 in = 25.4 mm	12 in x 25.4 = 304.8 mm
	1 in = .0254 m	120 in x .0254 = 3.05 m
	1 ft = .3048 m	12 ft x .3048 = 3.68 m
	1 mm = .0394 in	100 mm x .0394 = 3.94 in
	1 m = 39.37 in	10 m x 39.37 = 393.7 in
	1 m = 3.281 ft	10 m x 3.281 = 32.81 ft
Volume	1 gal = 3.785 l	10 gal x 3.785 = 37.85 l
	1 L = .2642 gal	100 L x 26.42 = 26.42 gal
Weight	1 lb. = .454 kg	10 lb x .454 = 4.54 kg
	1 kg = 2.205 lb	10 kg x 2.205 = 22.05 lb
Pressure	1 psi = .06895 bar	40,000 psi x .06895 = 2758 bar
	1 bar = 14.503 psi	2758 bar x 14.503 = 40,000 psi
Flow	1 gpm = 3.785 lpm	30 gpm x 3.785 = 113.55 lpm
	1 lpm = .2642 gpm	100 lpm x .264 = 26.42 gpm
Force	1 lb = 4.448 N	100 lb x 4.448 = 444.8 N
	1 N = .2248 lb	900 N x .2248 = 202.32 lb
Torque	1 lb-ft = 1.3567 N-m	100 lb-ft x 1.3567 = 135.67 N-m
	1 N-m = .737 lb-ft	100 N-m x .737 = 73.7 lb-ft
Power	1 hp = .7457 kW	50 hp x .7457 = 37.29 kW
	1 kW = 1.341 hp	50 kW x 1.341 = 67.05 hp

Formula	English Units	Metric Units
Power Requirements*	hp = gpm x psi / 1550	kW = lpm x bar / 540

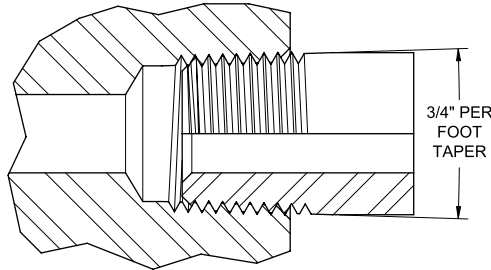
* Formulas assume 90% mechanical efficiency

CONNECTION TYPES

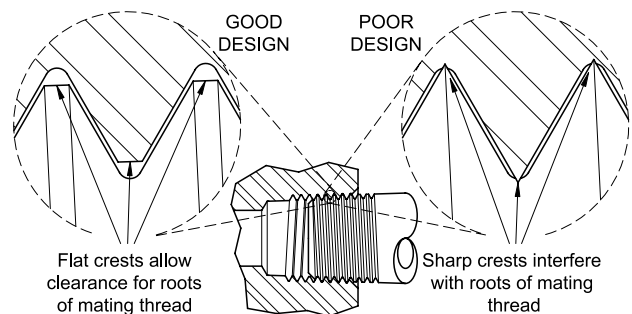
Several connection types are used at pressures of 15,000 psi (1000 bar) and below. The purpose of this section is to allow users to identify the connections needed and provide information on the features and proper use of each.

PIPE THREADS (NPT)

- Most widely used connection type at pressures of 15,000 psi (1000 bar) and below.
- Pipe threaded fittings are relatively inexpensive and readily available in sizes from 1/16" to 1". Larger sizes are available with limited fitting selection.
- NPT threads are tapered so that, as the thread engagement between the male and female threaded components increases, the threads get closer until the connection becomes tight.
- Unlike connection types that seal using closely machined seating surfaces or soft seals (such as O-rings), pipe threads seal around the threads, with Teflon® tape or pipe joint compound applied to the threads to prevent water from escaping through the tiny gaps between the male and female threads.
- Pipe threads, on the other hand, have a significant potential for galling — where threads seize together as threaded components are tightened. Some of the factors that affect the likelihood of galling are:
 - **Materials:** many stainless steels have a higher tendency to gall than carbon steels, and like materials are more prone to galling than two different materials.
 - **Thread quality:** a rough finish on thread surfaces increases the potential for galling.
 - **Thread profile:** some manufacturers allow sharp edges at the crest of each thread causing interference with the thread roots of mating part (see illustration at right) and significantly increasing the risk of galling. All pipe threads on Jetstream products are machined with flat thread crests to prevent damage to mating parts.
 - **Copper plating** is used on Jetstream stainless steel fittings with male pipe threads to prevent galling.
 - **Thread lubricants (anti-seize)** applied to the male threads before engagement greatly reduce the chance of galling. Consistent use of thread lubricant is **strongly recommended** for all connections but absolutely essential for pipe threads or stainless steel connections.



Actual Size Reference Chart	
	1/16"
	1/8"
	1/4"
	3/8"
	1/2"
	3/4"
	1"



CONNECTION TYPES

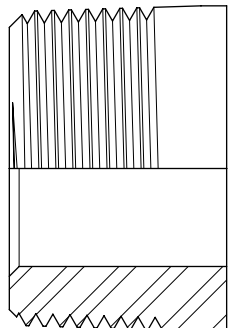
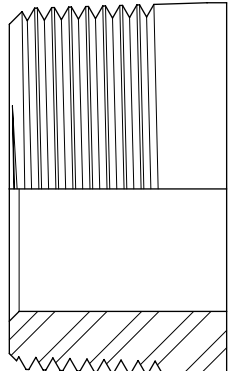
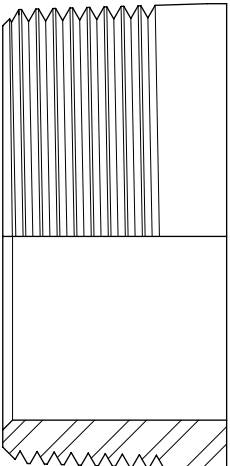
PIPE THREADS (NPT) (continued)

- Jetstream pipe threads are machined to a special specification to ensure greater thread engagement for increased safety and to reduce the risk of galling as noted on the previous page.

Pipe Thread Connection Instructions

1. Wrap Teflon® tape three or four times around the male threads in a clockwise direction (if looking at the face of the threaded end of the part).
2. Brush on nickel- or silver-based thread lubricant (anti-seize) over the Teflon.
3. Install male threaded component into female threaded component and hand tighten.
4. Wrench tighten two turns past hand tight.



Actual Size Reference Chart (continued)	
	1-1/4"
	1-1/2"
	2"

TECHNICAL

UP TO 15,000 PSI (1000 BAR)

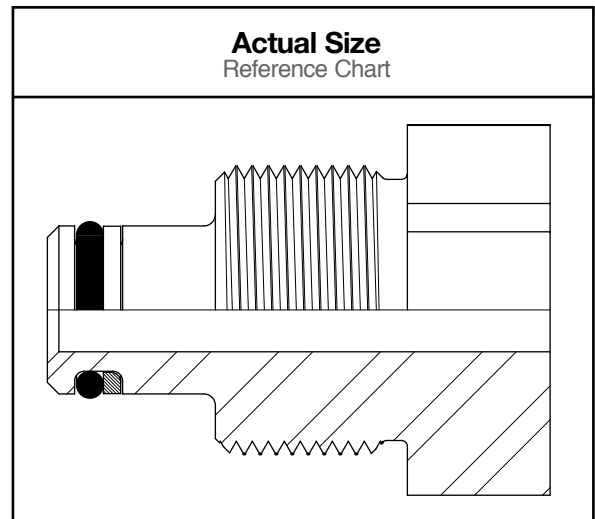


CONNECTION TYPES

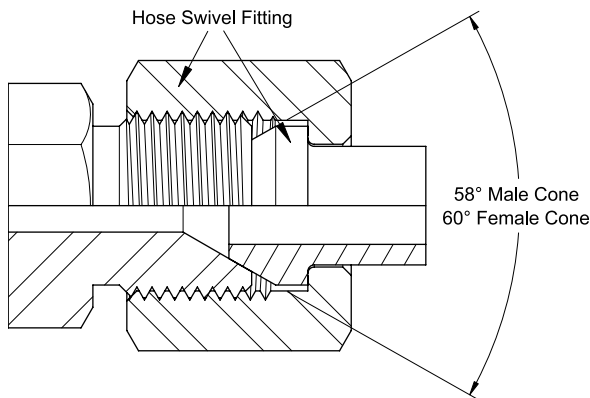
JETSTREAM HHP MALE ADAPTERS

For use with 5015Q pumps, the Jetstream HHP connection features an easily replaceable seal to prevent wear or damage to the manifold and a large bore to minimize pressure drop through fittings.

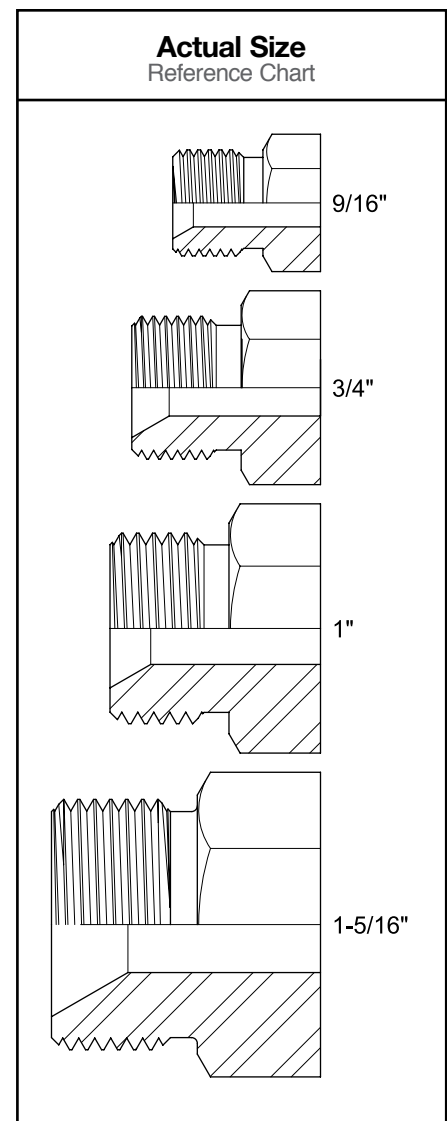
- Copper plated for galling resistance
- Stainless steel



TYPE M



- Industry standard connection
- Designed for fast, simple connection of waterblast hoses and lances to waterblast equipment
- Male conical seat protected from damage by the hose swivel nut
- Unlike medium pressure connections, the seating surfaces do not rotate against each other when connections are made, resulting in a more reliable, longer lasting connection
- Verify pressure rating of Type M hoses and fittings before use as the connection type is used for a wide range of pressures due to its ease of use and reliability

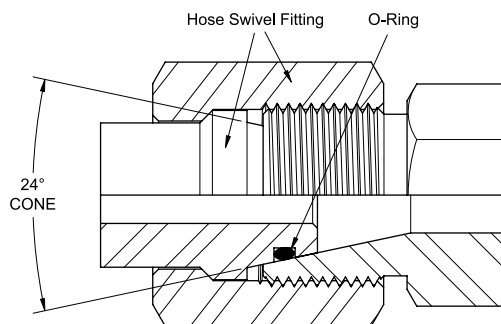


Size	Connection Thread	Recommended Torque	
		ft-lb	N-m
9/16" Type M	9/16" – 18UNF	30	41
3/4" Type M	3/4" – 16UNF	45	61
Type M	1" – 12UNF	70	95
1-5/16" Type M	1-5/16" – 12UN	110	149

Note: Always apply thread lubricant (anti-seize) to male threads before assembling waterblast connections. See page F-1, for thread lubricants available from Jetstream.

CONNECTION TYPES

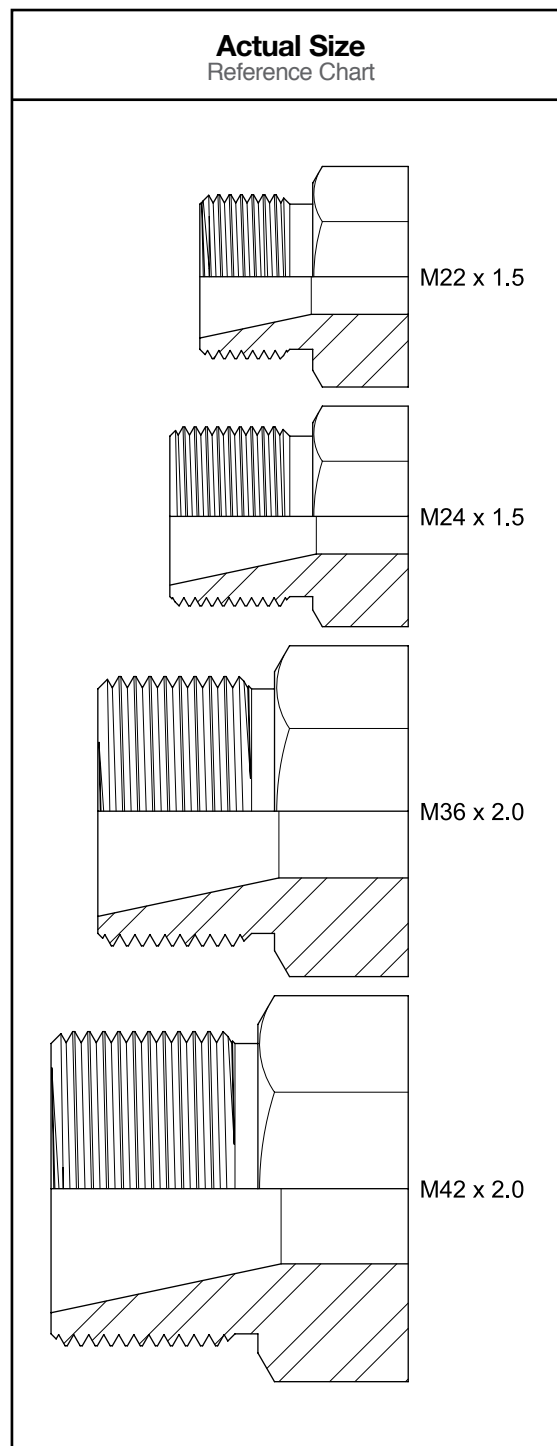
METRIC



- Internationally used connection
- Designed for fast, simple connection of waterblast hoses and lances to waterblast equipment
- Male conical seat protected from damage by the hose swivel nut

Connection Sizes
M22 x 1.5
M24 x 1.5
M36 x 2.0
M43 x 2.0

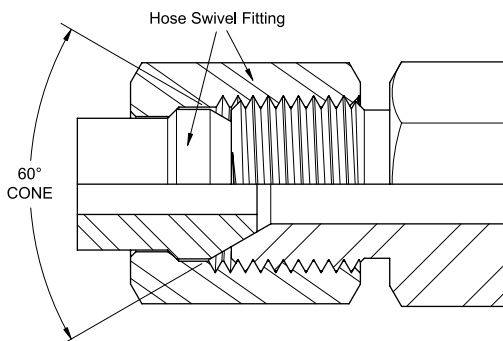
Note: Always apply thread lubricant (anti-seize) to male threads before assembling waterblast connections. See page F-1, for thread lubricants available from Jetstream.



CONNECTION TYPES

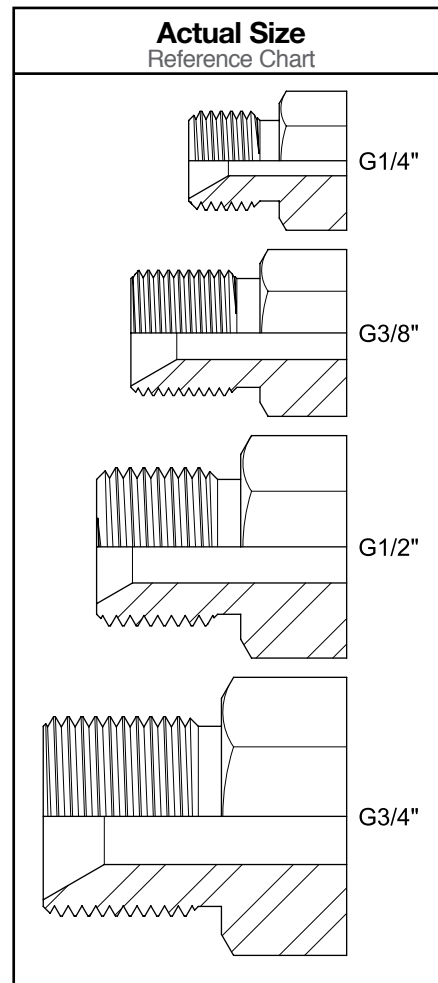
BRITISH STANDARD PIPE (BSP)

- Industry standard connection most common in Europe
- Designed for fast, simple connection of waterblast hoses and lances to waterblast equipment
- Male conical seat protected from damage by the hose swivel nut
- Products with BSP connections featured in this catalog are straight thread connection using a metal-to-metal conical seat as the sealing method. BSP is also available as a tapered thread similar in function to NPT pipe threads, but this variation is not found on products in this catalog.



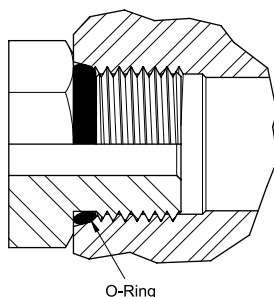
Size	Connection Types
G1/4"	1/4"-19BSP
G3/8"	3/8"-19BSP
G1/2"	1/2"-14BSP
G3/4"	3/4"-14BSP

Note: Always apply thread lubricant (anti-seize) to male threads before assembling waterblast connections. See page F-1, for thread lubricants available from Jetstream.



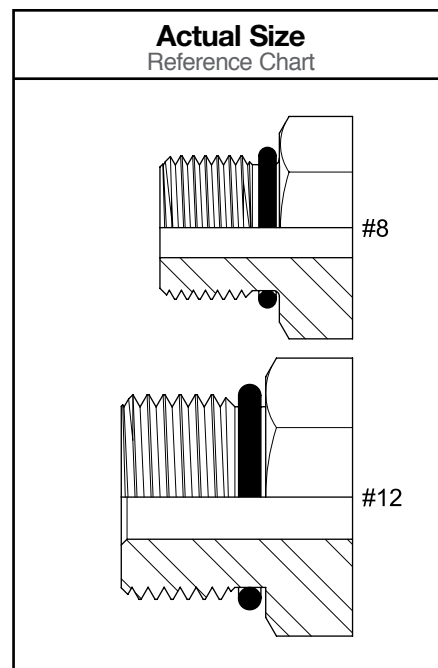
STRAIGHT BOSS

- Hydraulic connection adapted for waterblast use with American Aero pumps
- Sealing accomplished by O-ring behind male threads
- Used at 10,000 psi (700 bar) or below



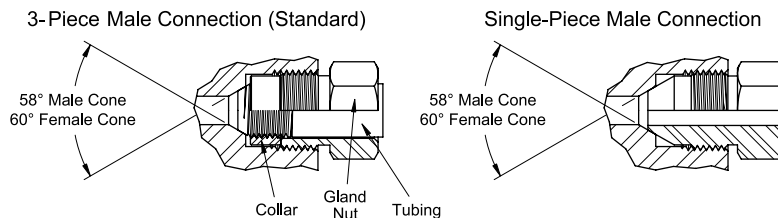
Size	Connection Thread
#8	3/4"-16UNF
#12	1-1/16"-12UN

Note: Always apply thread lubricant (anti-seize) to male threads before assembling waterblast connections. See page F-1, for thread lubricants available from Jetstream.



CONNECTION TYPES

MEDIUM PRESSURE (MP)



- Industry standard connection for 20,000 psi (1400 bar) applications, medium pressure is occasionally used in applications at 15,000 psi (1000 bar) and below.
- Connections exist in two different forms:
 1. Used to connect medium pressure tubing with a conical male seat and left-handed threads to a female port using a gland nut and left-hand threaded collar (Gland, Collar & Tubing).
 2. For many medium pressure male fittings, the geometry of the gland, collar, and tubing is combined into one component that connects directly to a medium pressure female port (Single Piece Style).
- With proper care, this connection is suitable for repetitive connection/disconnection.
- Damage from repeated or improper use can often be repaired using reconing tools. For details on tubing preparation and repair equipment, contact Jetstream Sales.

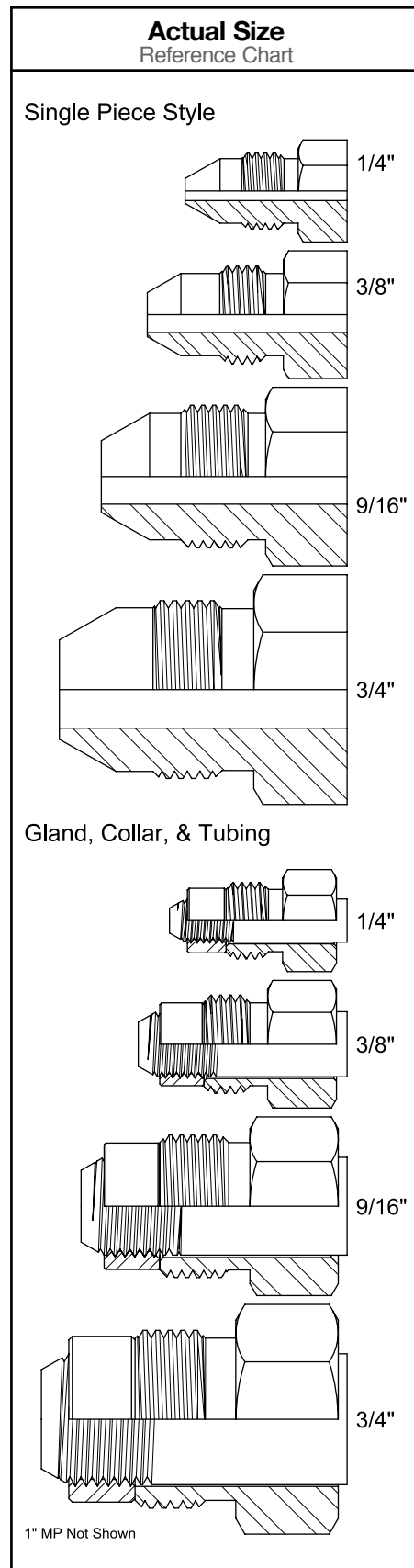
Size	Connection Thread	Tubing Thread* Left-Hand	Recommended Torque	
			ft-lb	N-m
1/4" MP	7/16"-20UNF	1/4"-28UNF	20	27
3/8" MP	9/16"-18UNF	3/8"-24UNF	30	41
9/16" MP	13/16"-16UNF	9/16"-18UNF	50	68
3/4" MP	3/4"-14NPSM	3/4"-16UNF	90	122
1" MP	1-3/8"-12UNF	1"-14UNF	125	170

* For three-piece connection styles only

Connection Instructions

1. *3-piece Male Connection Style only* — Liberally apply anti-seize to male tubing threads to prevent thread galling.
2. *3-piece Male Connection Style only* — Slide gland nut over tubing and thread collar (left-hand threaded) onto tubing until it is past the first one or two full threads of the tubing.
3. *Both Styles* — Liberally apply anti-seize to male connection threads and male cone.
4. *Both Styles* — Install male connection into female port and tighten according to torque specification in chart above.

Note: Always apply thread lubricant (anti-seize) to male threads before assembling waterblast connections. See page F-1, for thread lubricants available from Jetstream.



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